

THE EFFECTS OF PRICE PARTITIONING AND ITS IMPLICATIONS FOR  
MENU PRICING

A Dissertation

Presented to the Faculty of the Graduate School  
of Cornell University

In Partial Fulfillment of the Requirements for the Degree of  
Doctor of Philosophy

by

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January 2013

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# THE EFFECTS OF PRICE PARTITIONING AND ITS IMPLICATIONS FOR MENU PRICING

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Cornell University 2013

This dissertation comprises three essays under the umbrella of behavioral research on price partitioning. The first essay examined consumers' responses to financially equivalent *prix fixe* menu prices with a built-in gratuity, a separately listed percentage gratuity or a separately listed dollar gratuity at surcharge levels different from the 15% tipping benchmark. I demonstrated that surcharge level moderated the relationship between menu price presentation and consumers' deal perception and this moderating effect can be explained by the evaluability of the individual price components within a partitioned price.

The second essay further explored surcharge framing by studying the differential effects of voluntary versus mandatory service gratuity on consumers' menu price perception and demand. Findings from three experiments indicated that a Sunday brunch price with 15% customary tipping led to a lower perceived expensiveness and higher patronage intent than the same price with a 15% mandatory service gratuity. More importantly, through process measure analyses and mediation tests, the studies provided converging evidence that participants' use of surcharge and perceived surcharge fairness acted in parallel and with similar strengths as mediators of the relationship between surcharge policy and menu price perception. I also found that participant's patronage intent was mediated by both surcharge fairness perception

and price expensiveness perception, although the impact of the former mediator was significantly stronger.

As an extension of my empirical work using a multi-process approach to studying price partitioning effects, the third dissertation essay described an integrative framework on the psychological mechanisms for processing partitioned prices. Based on a review and synthesis of extant research, I identified seven processing routes and suggested that an individual will take a particular route to process a partitioned price depending on five key characteristics of its secondary price component. This integrative model can adequately yet parsimoniously differentiate among the various psychological mechanisms underlying the price partitioning effects and potentially resolve some inconsistent findings in the literature.

## BIOGRAPHICAL SKETCH

Shuo Wang holds a Bachelor of Science in Economics from Beijing Union University, China, and a Master of Science in Economics from University of Bristol, UK. Prior to pursuing his Ph.D. degree in Hotel Administration at Cornell University, Shuo held a number of managerial positions in sales and marketing and revenue management at several international hotels in Beijing, China.

Shuo's research has been presented at behavioral pricing conference, International Council on Hotel, Restaurant and Institutional Education (ICHRIE) summer conference and Harrah hospitality research summit, where he won the best paper award. He has had research published in the Ivey Business School Case series and the Center for Hospitality Research (CHR) report series.

To my late mother, for her unconditional love and support

## ACKNOWLEDGMENTS

The past few years have been a rocky ride for me and I cannot imagine completing my Ph.D. without the generous support and tremendous encouragement from the members of my committee, friends, and family. First and foremost, my utmost gratitude to my committee chair, Michael Lynn, who not only provided insightful guidance and thought-provoking comments on my dissertation research every step of the way but also went the extra mile to help me overcome the obstacles I faced as an unfunded international student in the later stages of my Ph.D. This dissertation would not have been possible without his unfailing ability to provide support when it was most needed. I would also like to thank Rohit Verma and Douglas Stayman for their extraordinary patience and commitment to their work as my committee members over the years as well as their timely and constructive feedback on the final draft of this dissertation.

I am deeply indebted to the Department of Policy Analysis and Management, College of Human Ecology, Cornell University for awarding me a teaching assistantship in 2011--2012, providing not only financial support to enable me to complete this dissertation but also the opportunity for me to develop classroom teaching skills. I am also grateful to Steven Carvell, Lisa Shaffer, Sarah Hilsman, and Michael Skinner for their administrative support in fulfilling my degree requirements.

I want to thank my fellow Ph.D. colleagues, especially Jin-Young Kim, Zhaoping Liu, Lian Shao, King Yin Wong, Iris Lui, Sanghee Park, and Xie Xiaoqing for their moral support and good cheer and also express my gratitude to my housemates at Stewart Little Coop, especially Adirek Rugkong, Eric Lee, Veronica

Morales, Christine Bayer, Josephine Archibald, Julia Hastings-Black, Tiffany Yao, Fernanda Leite Lopez de Leon, and Brennan Kannapell for giving me a “home away from home”. I am also thankful to Hong Gao Cox, Chen Clausen Tian, Cindy Chen Buchan, Yi Wei, Kai Zhang, Belinda Li, Ping Kang, Xin Guo, Yue Li, Wei He, Jiewen Xiang, Shihao Wang, Cvetomir Kovchazov, Michael Genkin, Jennifer Cowan, Praveen Gattu, Juan Meng, Adam Nguyen, Han Xiaoyun, Zhigang Zeng, Hamilton Paul and Chih-Chien Chen. Their support and care have helped me overcome setbacks and stay sane through these difficult years. My appreciation also goes to Jing'an Wei, Kun Yan, Peter Hildebrand, Raymond Leung, Jane Li, Cliff Attfield, Carol Propper, Judy Siguaw, Penny Simpson, James Hesford, and Jeff Lewis for their mentoring at different stages of my life and their belief in me.

In closing, I would like to express my heart-felt gratitude to my parents, Yiping Wang and Rongxin Liu, and my elder sister Tie Wang for their love, support and understanding all these years.



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# CHAPTER 1

## THE IMPACT OF PRICE EVALUABILITY ON PRIX FIXE MENU PRICE JUDGMENT

### ***Introduction***

*Prix fixe* is a French phrase meaning “a complete meal offered at a fixed price”(Merriam-Webster’s Collegiate Dictionary, 2003). Restaurants offering *prix fixe* dining typically allow each customer select multiple courses (e.g., one appetizer, one entrée and one dessert) from a special menu at a set price per person. Although *prix fixe* menus are not as common as *a la carte* menus on which restaurants list and price each item separately, they seem to be gaining popularity. Restaurants have used *prix fixe* meals to showcase their signature dishes, to cater functions or special crowds, to promote seasonal food and to manage excess inventory.

As social etiquette in the US, restaurants normally leave to customers to decide how much to tip. According to the tipping guide on money.cnn.com, it is common for restaurant patrons to voluntarily leave 15% of pre-tax bill as gratuities for adequate service (“CNN/Money: How much to tip,” n.d.). For *prix fixe* meals, however, restaurants often impose a mandatory service gratuity above the 15% tipping benchmark. There are two main considerations for this pricing practice. First, serving *prix fixe* meals tends to entail substantial labor, particularly if the meal has more than three courses or wine parings or involves large dining parties. To ensure that waiters and other staff are appropriately compensated for their time and efforts, it may be necessary for restaurants to require service gratuities above the standard 15% tipping

rate. Second, restaurants frequently present *prix fixe* meals as special deals due to their important roles in revenue generation and inventory control. To maintain a decent profit, restaurant operators may choose to charge a mandatory, higher-than-average service gratuity to offset the relatively inexpensive meal price.

One critical issue for restaurants who post mandatory service gratuities higher than the 15% benchmark for their *prix fixe* meals is how to present the menu price. Although previous research has shown that restaurants may be better off if they separately list the standard 15% mandatory service gratuity on the menu rather than build it into the menu price (Wang & Lynn, 2007), other studies suggested that the positive effect of price partitioning relative to price consolidating may not prevail when the surcharge deviates from its reference level (Bertini & Wathieu, 2008; Burman & Biswas, 2007; Cheema, 2008; Sheng, Bao, & Pan, 2007). Therefore, the primary objective of this paper is to examine the potential moderating effect of mandatory service gratuities above or below the 15% standard on the relationship between *prix fixe* menu price presentation and consumers' deal perception. In addition, I am interested in whether presenting a mandatory service gratuity in percentage term induces different responses from customers than does presenting the same surcharge in dollar amount.

The structure of this paper is as follows. I first review relevant literature and construct hypotheses on how price evaluability influences consumers' deal perception on *prix fixe* menu price. I then describe an online experiment that tests the specific predictions. Finally, I discuss the results and provide managerial implications for pricing *prix fixe* menus based on the findings from this research.

### ***Conceptual Framework and Hypotheses Development***

An extensive amount of research in behavioral pricing has substantiated the fact that presenting the price of an offer in separate parts (i.e., a base price plus mandatory surcharges) induces different responses from customers than does presenting a financially equivalent consolidated price. Some researchers suggest that compared with an all-inclusive presentation, the presence of multiple components in a partitioned price increases consumers' cost of accurately recognizing the total price (Hooman Estelami, 2003a, 2003b; Morwitz, Greenleaf, & Johnson, 1998). However, because the relative magnitude of the surcharge to the base price is typically small, it may not be worthy for consumers to spend extra time and cognitive efforts to integrate individual price components using precise calculation. Rather, they tend to either anchor on the base price and make insufficient adjustment to account for the surcharge or simply ignore the surcharge altogether (Morwitz et al., 1998). As a result, on average, partitioned prices often lead to an underestimate of the total price and a higher demand than comparable all-inclusive prices (Lee & Han, 2002; Morwitz et al., 1998).

Alternatively, other researchers maintain that partitioned price presentation makes each individual price component and its associated benefits salient and accessible (Bertini & Wathieu, 2008; Chakravarti, Krish, Paul, & Srivastava, 2002). As a result, consumers may attend to and appraise those individual price components and use the ensuing evaluative judgments to construct their preference or gauge demand. For example, several studies have demonstrated that consumers' preferences between partitioned and consolidated prices are contingent on their fairness

perceptions of the partitioned surcharge (Burman & Biswas, 2007; Cheema, 2008; Sheng et al., 2007). When consumers perceive the surcharge as unreasonable or unjustifiable, they prefer an all-inclusive price over the corresponding partitioned price. The opposite is true when the surcharge is perceived as fair.

Price judgment often takes the form of comparing the observed price to its reference price or price range (Monroe, 1973). One issue for consumers exposed to a partitioned price is how to integrate their judgments on individual price components to form an overall price evaluation. Research on evaluation mode proposes that when consumers are asked to conduct an evaluation on a multi-attribute option independently (i.e., a separate evaluation mode), the impact of an individual attribute on the overall assessment is often related to its evaluability (Hsee, Loewenstein, Blount, & Bazerman, 1999). In the context of partitioned price judgment, evaluability refers to whether consumers can assess a price component of the partitioned price with confidence (Bertini & Wathieu, 2008). It is suggested that consumers' price expectations or beliefs have a significant impact on their perceived price evaluability (Kalyanaram & Winer, 1995). Accordingly, consumers may find an individual price component less evaluable due to the lack of comparative standards and hence assign less weight to it in their overall price evaluation. On the other hand, if they have a well-defined reference level or reference range for the observed price component, they will be more confident in making a price judgment. Furthermore, when the observed price component deviates from its reference level or reference range, the resulting positive or negative judgment in terms of transaction utility (Thaler, 1985, 1999) and fairness perception (Xia, Monroe, & Cox, 2004) may exert disproportionate impact on

the overall price evaluation and demand (Bertini & Wathieu, 2008).

To examine the influence of price evaluability on consumers' perception and evaluation of a partitioned price, I conducted an online experiment in the context of *prix fixe* menu price. Before I discuss how price evaluability influence consumers' deal perception on *prix fixe* menu prices, two characteristics of service gratuities at restaurants are worth-noting. First, unlike most types of surcharges, restaurant service gratuities are established and bounded by the social norm of tipping and fairly standard across the country. Consequently, consumers' reference range for restaurant gratuities is fairly constricted and homogenous and a service gratuity above (below) the standard 15% should bring about negative (positive) evaluative judgment on the surcharge. Second, the fact that restaurant service gratuities are usually specified as a percentage of the bill further facilitates price comparison and judgment because they are stated in relative units and are not influenced by variations in dish prices or check sizes. On the other hand, it is more difficult for consumers to compare the prices of menu items since factors such as portion size, special ingredients, reputation of the chef, as well as restaurant ambiance could all contribute to a less-defined reference range for even the most common dishes. Hence I argue that in general restaurant service gratuities have more evaluability than dish prices. As a result, for *prix fixe* menus with all-inclusive prices, given that the surcharge level is masked by the price format and obscured by the relatively blurry reference range of dish prices, divergences from the standard 15% should have little impact on consumers' deal perception. However, a shift from a built-in gratuity to a separately listed percentage gratuity should enhance the evaluability of the surcharge at levels different from the

15% standard. Therefore, consumers' deal evaluations should be shaped more by their evaluative judgments on the percentage gratuity. Specifically, I proposed that:

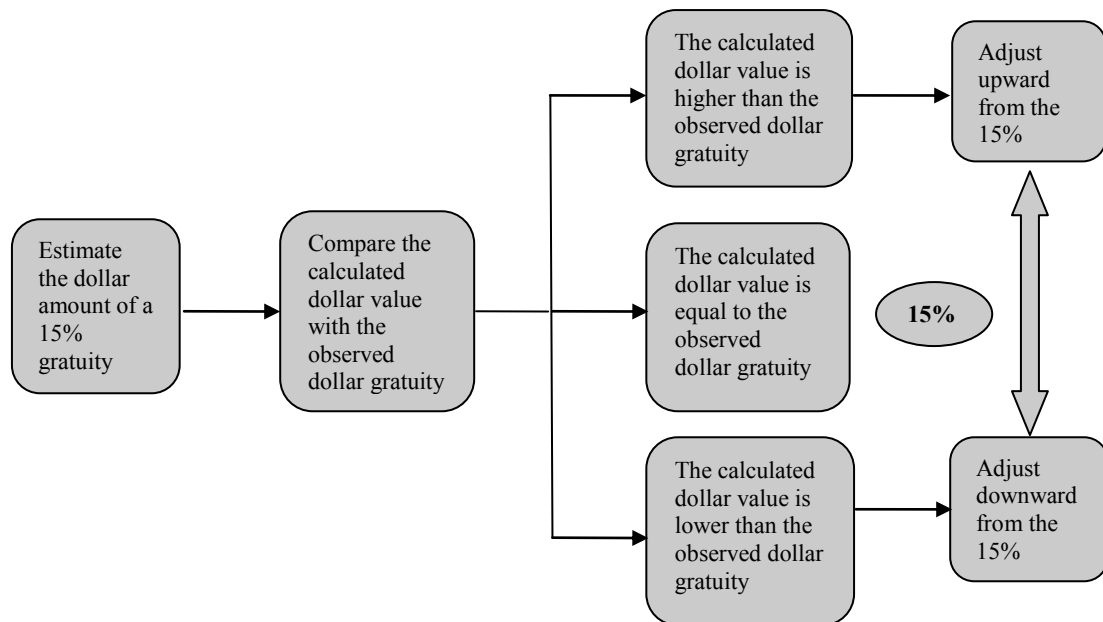
*H1: Prix fixe menu prices with a percentage service gratuity below the standard 15% will be evaluated more favorably than equivalent all-inclusive prix fixe menu prices. Prix fixe menu prices with a percentage service gratuity above the standard 15% will be evaluated less favorably than equivalent all-inclusive prix fixe menu prices.*

If evaluating a percentage gratuity is straightforward for customers because of its small and clear reference range and invariance to the base price, then changing the separately listed surcharge from a percentage gratuity to a corresponding dollar gratuity is likely to reduce the evaluability of the surcharge by obscuring the comparison standard. However, stating a service gratuity as a dollar amount is less common, and this novel practice may encourage consumers to direct their attention and cognitive efforts to convert the dollar-denominated gratuities to the more familiar and informative percentage frame. Since directly figuring out the approximate percentage level of a dollar gratuity involves relatively complex calculations, I proposed that consumers are more likely to work backwards. Specifically, I suggested that consumers will first estimate the dollar amount of a 15% gratuity. Then they compare that calculated dollar value with the observed dollar gratuity. If the actual dollar gratuity is higher (lower), they would make an upward (downward) adjustment from the 15% to approximate the corresponding percentage gratuity. Either way, previous research suggests that the adjustments tend to be inadequate (Tversky & Kahneman, 1974), resulting in a calculated percentage level closer to the standard 15%

than it actually is (please see figure 1.1). This converting process makes consumers more accommodating to the divergences of gratuities from the standard 15% when they are specified in dollar term than when they are specified in percentage term. Consequently, consumers exposed to dollar service gratuity should have less polarized deal evaluations of the menu price than those exposed to equivalent percentage gratuity. The above discussion is summarized in the following hypothesis:

*H2: Prix fixe menu prices with percentage service gratuity below (above) the standard 15% will be evaluated more (less) favorably than those with equivalent dollar service gratuity.*

I tested the above hypotheses with an online experiment described below.



**Figure 1.1: The suggested process for estimating the percentage level of a dollar service gratuity**



## ***Method***

### **Participants**

Six hundred and six consumer panelists from a national marketing research company participated in my study to earn incentive points upon completion of the online experiment. One hundred and six of them did not go through the entire experiment process and were excluded from the analyses. Of the 500 participants included in the analyses, 42% were men and 84% were Caucasian. Their ages ranged from 16 to 82, with the average being 40.39. Two percent of the participants had some education, 21% were only high school graduates, 41% had some college, 24% were college graduates, and 11% had done post-graduate work. Eighteen percent of the participants reported a household income less than \$25,000 a year, 40% reported between \$25,001 and \$50,000, 31% reported between \$50,001 and \$100,000, and 11% reported more than \$100,000 a year. Their average dining out frequency at full-service restaurants was four times per month, with a low response of zero time per month and a high response of 99 times per month. Thus, the sample represented a diverse group of restaurant patrons.

### **Design and Procedure**

The experiment is a 3 (surcharge level: 12% vs. 18% vs. 23%) x 3 (surcharge format: percentage vs. dollar vs. built-in service gratuity) between-subject design. I chose 12% and 18% to represent relatively common gratuity levels with the same modest deviation below and above the 15% standard. I expected that consumers would

have a less favorable perception on an 18% service gratuity and a more favorable perception on a 12% service gratuity. In addition, I included a 23% service gratuity to examine participants' reaction to an aggressively priced service gratuity.

Participants first read a scenario where they were asked to imagine that they are dining with a friend before seeing a Broadway show at a table-service restaurant with a good online review on customer service. Next, participants saw a contrived three-course *prix fixe* dinner menu that included price information on the computer screen. I then told participants that the restaurant had adopted a mandatory service gratuity policy rather than voluntary tipping to streamline the service operation and cut down serving time, given the time constraints that theatergoers often face.

I manipulated the surcharge formats as follows. In the built-in gratuity condition, participants were presented with one single menu price inclusive of service gratuities. Participants in the percentage gratuity condition read a menu price with one of the three fixed percentage levels of automatic gratuity whereas those in the dollar gratuity condition was shown the same menu price with a fixed automatic gratuity in dollar terms.

After making one selection from each course and placing a hypothetical order, participants responded to several questions on the next screen based on their knowledge about the menu. First, participants were asked to indicate their agreement on the statement "The pre-theatre dinner provides good value for money" on a Likert-scale ranging from 1 (very much disagree) to 7 (very much agree). Then they accessed the perceived value of the pre-theatre dinner on a seven-point scale anchored by "bad deal / good deal." Answers to these two questions were used to measure deal

perception.<sup>1</sup> To control for the effect of service quality on value judgment, I also asked participants to rate their expected level of service quality on a nine-point scale anchored by “very poor / very high.” After recalling and writing down the total cost for the pre-theatre dinner, participants in the various conditions responded to slightly different questions for additional analyses. In the end of the experiment, data about participants’ tipping habits and attitudes as well as their demographic information were collected.

## ***Results***

### **Deal Evaluations: Full Model**

A deal index was constructed by averaging responses to the two deal perception questions (Cronbach’s  $\alpha = 0.86$ ). Mean deal indices for each condition are summarized in Table 1.1. The deal index was initially analyzed using a full factorial design of the general liner model (GLM) with surcharge level and surcharge format as between-subject factors and the expected level of service quality as a covariate. However, the expected service quality turned out to be an insignificant ( $F(1, 490) = .687, p = .408$ ). I hence dropped this variable and conducted a full 3 x 3 between-participant ANOVA on deal index. As expected, I found a marginally significant two-way interaction between surcharge level and surcharge format ( $F(4, 491) = 2.256, p$

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<sup>1</sup> Participants were also asked to rate the pre-theatre dinner on a 7-point scale from 1 (very cheap) and 7 (very expensive). I did not include this measure when constructing the deal perception index since it tapped more into perceived expensiveness. However, a 3 x 3 ANOVA on the expensiveness perception revealed that neither the main effects nor the interaction between surcharge level and surcharge format were significant (all  $ps > .29$ ).

= .062).

**Table 1.1: Deal index as a function of surcharge format and surcharge level**

	Percentage service gratuity	Dollar service gratuity	Built-in service gratuity
12%	4.57 (n=44)	4.24 (n=61)	3.92 (n=44)
18%	4.05 (n=52)	4.18 (n=56)	4.47 (n=62)
23%	3.92 (n=59)	4.10 (n=56)	4.14 (n=66)

Notes: Mean value of the deal indices with the corresponding number of observations for each condition (in parentheses) was indicated in each cell.

### **Deal Evaluations: Pooled Model**

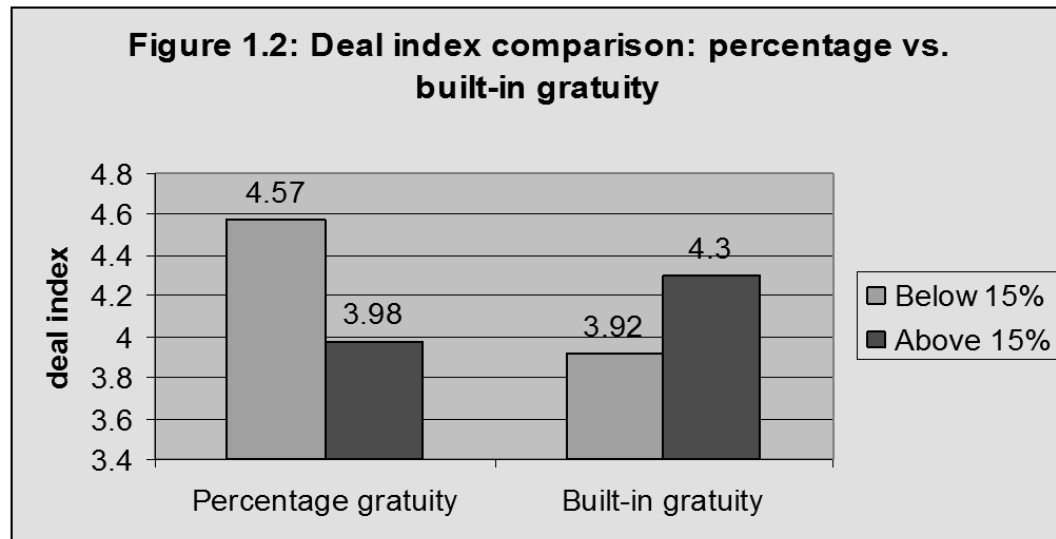
Before testing the specific predictions, I wanted to find out whether the 18% service gratuity induced different responses among participants than did the 23% service gratuity. An ANOVA analysis with the 18% and 23% surcharge conditions alone from the full model indicated that neither the main effects nor the interaction between surcharge format and surcharge level were significant (all  $ps > .18$ ). I hence collapsed the data for 18% and 23% service gratuities to represent the surcharge level above the 15% benchmark. The surcharge level below the standard 15% remained as 12%. A 2 (surcharge level: below vs. above 15%) x 3 (surcharge format: percentage y vs. dollar vs. built-in service gratuity) between-subject ANOVA on deal index with the pooled model revealed a significant two-way interaction only ( $F(4, 494) = 4.232$ ,  $p = .015$ ). The two hypotheses were tested in a series of interaction contrasts and post hoc comparisons using error term from this omnibus ANOVA (Keppel & Wickens, 2004).

### **Deal Evaluations: Percentage vs. Built-in Service Gratuity (Pooled Model)**

To test hypothesis 1, I considered percentage and built-in gratuity conditions

alone and analyzed the deal index as a function of surcharge level (below vs. above 15%) and surcharge format (percentage vs. built-in service gratuity) (please see figure 1.2). The results yielded a significant two-way interaction only ( $F(1, 491) = 8.455, p = .004$ ).

As expected, menu prices with a percentage service gratuity ( $M = 4.57$ ) led to a better deal perception than equivalent all-inclusive prices ( $M = 3.92$ ) when the gratuity level is below the standard 15% level ( $F(1, 491) = 5.244, p = .022$ ). However, the relationship was reversed when the gratuity level is above the standard 15% level ( $M = 3.98$  vs.  $M = 4.30$ ;  $F(1, 491) = 3.349, p = .068$ ). Therefore, hypothesis 1 was supported.



**Figure 1.2: Deal index comparison: percentage vs. built-in gratuity**

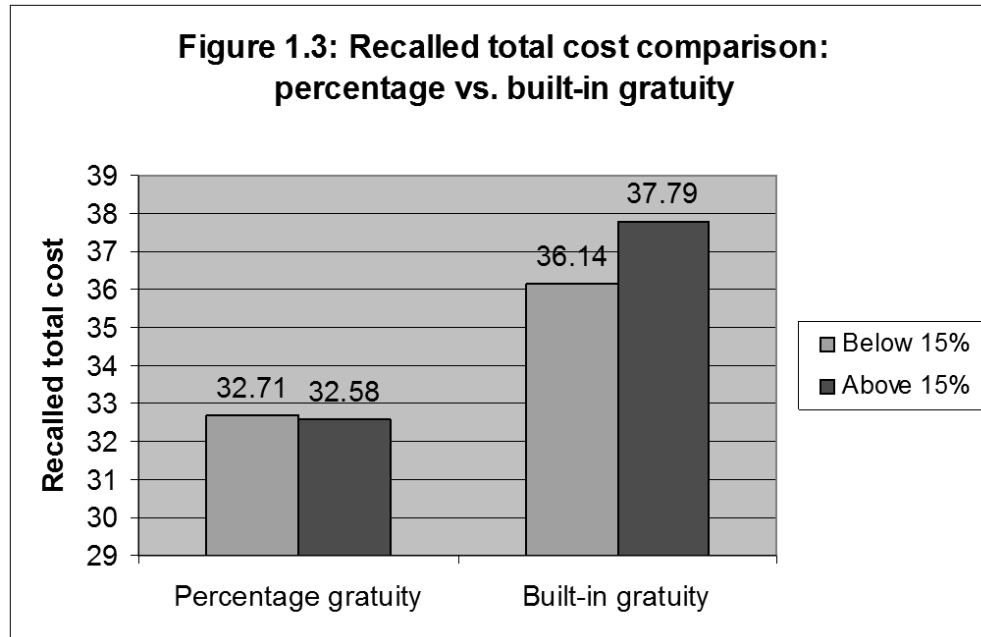
An implied premise for hypothesis 1 is that, for all-inclusive menu prices, consumers may assume that the level of the built-in service gratuity is similar to the 15% benchmark. I therefore asked participants in the built-in service gratuity condition to indicate their expected percentage level of serviced gratuity hidden in the all-inclusive

menu prices. For the 167 valid responses, the average level of the expected built-in gratuity was 13.28% with a standard deviation of 6.44%. Both the median and the mode (49 out of 167) were 15%. The interquartile range (IQR) was 8% (18%-10%). These descriptive statistics combined suggested that, without explicit information about the included service gratuity, most participants in the built-in service gratuity condition indeed tended to assume a gratuity level close to the standard 15%.

To rule out the possibility that the observed pattern of deal perception was led by consideration of the total cost rather than the partitioned surcharges, an ANOVA was also performed on participants' recalled total cost for the pooled model with percentage and built-in service gratuity conditions alone. Given the open-ended response format for the recalled total cost, I first identified 31 outliers using the 1.5 x IQR criterion and then winsorized the data. The transformed recalled total cost ranged from \$24.11 to \$45.15 with a mean of \$34.37 and a mode of \$32.00. The 2 (surcharge level: below vs. above 15%) x 2 (surcharge format: percentage vs. built-in service gratuity) ANOVA revealed a significant main effect of surcharge format ( $F(1, 490) = 107.736, p < .001$ ) and a marginally significant main effect of surcharge level ( $F(1, 490) = 3.363, p = .067$ ), qualified by a significant interaction between them ( $F(1, 490) = 4.527, p = .034$ ).

Simple effect comparisons indicated that participants in the built-in service gratuity condition recalled a lower total cost when the surcharge is below 15% level ( $M = 36.14$ ) than it is above 15% level ( $M = 37.79$ ;  $F(1, 490) = 8.000, p = .005$ ). In contrast, participant exposed to the percentage service gratuity recalled similar total price regardless of the surcharge levels ( $M = 32.71$  vs.  $M = 32.58$ ;  $F(1, 490) = .042, p$

= .838) (please see figure 1.3). Since the interaction pattern between surcharge format and surcharge level is different for participants' recalled total cost than that for their value indices, it is unlikely that recalled total cost was the driver for participants' value perception.<sup>2</sup>



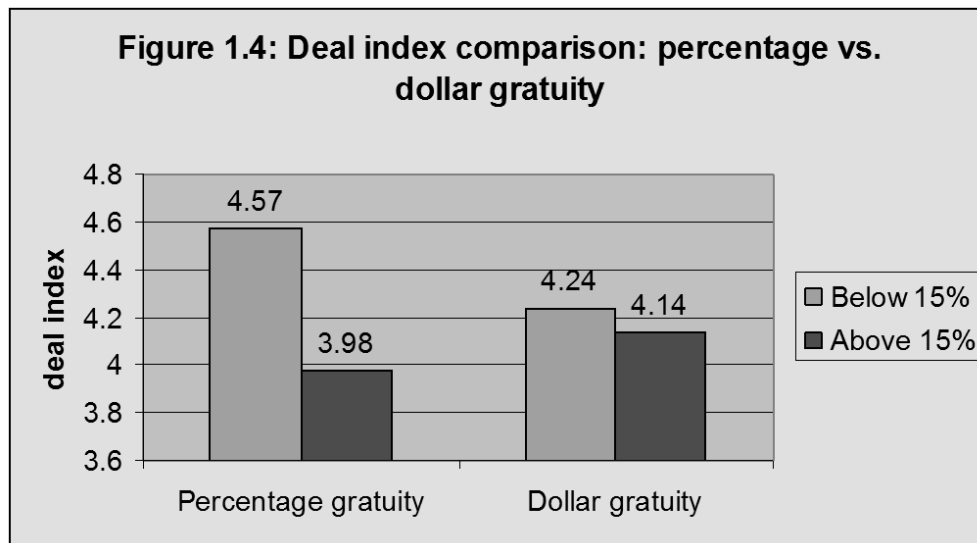
**Figure 1.3: Recalled total cost comparison: percentage vs. built-in gratuity**

### **Deal Evaluations: Percentage vs. Dollar Service Gratuity (Pooled Model)**

A 2 (surcharge level: below vs. about 15%) x 2 (surcharge format: percentage vs. dollar service gratuity) ANOVA on deal indices for the pooled model under percentage and dollar service gratuity conditions alone yielded a significant main effect of surcharge level ( $F(1, 491) = 4.680, p = .031$ ) and a non-significant main effect of surcharge format ( $F(1, 491) = .302, p = .583$ ). In addition, the interaction

<sup>2</sup> In a follow-up regression analysis on the percentage gratuity condition alone, the recalled total cost had a non-significant effect on the deal index ( $t = -.550, p = .583$ ), suggesting that it is unlikely to mediate the relationship between surcharge level and deal perception.

between the two factors ( $F(1, 491) = 2.361, p = .125$ ) was consistent with the expected pattern and achieved marginal significance with one-tailed  $p$  value. The followed-up simple effect comparisons on each surcharge format (please see figure 1.4) indicated that participants exposed to percentage service gratuity perceived the menu price with a below 15% service gratuity ( $M = 4.57$ ) as a better deal than that with an above 15% service gratuity ( $M = 3.98$ ;  $F(1, 491) = 6.152, p = .013$ ). In contrast, there was no significant difference below and above the standard 15% on deal evaluation in the dollar service gratuity condition ( $M = 4.24$  vs.  $M = 4.14$ ;  $F(1, 491) = .221, p = .638$ ).



**Figure 1.4: Deal index comparison: percentage vs. dollar gratuities**

### ***Discussion and Implication***

The main purpose of this research was to examine the influence of price partitioning on deal perception and the moderating effect of surcharge level relative to its reference in a *prix fixe* menu context. Consistent with previous research, results



from an online experiment demonstrated that participants responded differently to *prix fixe* menu prices with a separately listed percentage service gratuity than they did to the corresponding all-inclusive menu prices (where service gratuity was built into the menu price). More important, our findings suggested that surcharge levels moderated the relationship between surcharge format and deal perception. When service gratuity was above the standard 15%, participants perceived a menu price with a separately stated percentage gratuity as a lesser deal than did those who saw an equivalent all-inclusive menu price. In contrast, when service gratuity was below the standard 15%, participants regarded a menu price with a separately stated percentage gratuity as a better deal than did their counterparts exposed to a corresponding all-inclusive menu price.

I hypothesized that the moderating effect of surcharge level was due to the fact that percentage service gratuities have greater evaluability than dish prices. Thus, percentage gratuities different from the standard 15% received more decision weights than other less evaluable price components and became the main driver of participants' deal perception. To provide support for my claim and rule out an alternative explanation, I further showed that price partitioning led to lower recalled total costs than equivalent all-inclusive prices across surcharge levels. However, lower recalled total expenses didn't necessarily translate into better deal perception. In particular, when service gratuities were above 15%, participants' deal perception on the partitioned menu price was shaped more by the hefty surcharges than the low recalled total costs.

I also explored the potential framing effect of surcharge format on deal

perception. Based on the notion of price evaluability, I believed that consumers have to convert a dollar service gratuity to the corresponding percentage term if they want to evaluate it properly. Because of the difficulties associated with mental calculation, consumers are likely to resort to a converting process where they compare the observed dollar gratuity with the dollar amount of 15% gratuity and adjust the 15% level upward or downward based on comparison results. This procedure, however, tend to result in a value close to the 15% anchor level. Consequently, participants exposed to dollar service gratuities will have a better deal perception when the corresponding percentage gratuities are higher than 15%, and vice versa. Although data from our experiment followed the predicted pattern, they only produced a marginally significant interaction between surcharge format and surcharge level on deal perceptions. There are several possible explanations. First, since dollar-denominated service gratuities have low evaluability, some participants, especially those low in need for cognition (Cacioppo & Petty, 1982), may simply choose to ignore them or take them for granted. If this is the case, then the converting process did not happen at all and their deal perceptions should be driven by other relatively more evaluable price information such as the food price or the total price.

Second, participants who did make the calculation against percentages may not necessarily anchor on the standard 15% as I proposed. When choosing a starting percentage gratuity level to convert the dollar gratuity, some participants may apply their typical tip level, others may use their expected percentage gratuity for restaurants with automatic service charges, still others may simply use 10% or 20% for ease of calculation. Although participants may follow the same anchoring-and-adjustment

process as I hypothesized, different anchoring values will give rise to offsetting effects because the final values are always biased toward the anchors.<sup>3</sup>

Finally, some researchers argued that presenting price with a “\$” sign may increase the semantic salience of the price and bring about negative reactions (Kim & Kachersky, 2006; Yang, Kimes, & Sessarego, 2009). It follows that a dollar gratuity, with its affixed dollar sign, may dampen deal perception relative to comparable percentage gratuity in this regard. This possibility may also contribute to the marginally significant result.

The findings of the present research have several managerial implications for pricing *prix fixe* menus. Perhaps the most important implication is that restaurant operators should avoid imposing service gratuities that exceed the standard 15% separately on *prix fixe* menus. As shown in the study, consumers’ negative reactions to the higher-than-average service gratuities reduced the overall attractiveness of a *prix fixe* deal.

Second, this research suggested that if an operator needs (or wants) to impose a service gratuity above the standard 15%, it would be wise to present an all-inclusive price. As I discussed earlier, some restaurants are compelled to charge higher than normal service gratuities for *prix fixes* because these meals entail substantial service. Other restaurants may simply hope to sweeten their *prix fixe* deals and attract customers by discounting food items but raising the accompanying service gratuities to maintain profits. Regardless of the motivations behind, they would be better off in

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<sup>3</sup> For example, for a dollar gratuity between 10% and 15%, anchoring on 10% and adjusting upward will result in a value close to 10% while anchoring on 15% and adjusting downward will result in a value close to 15%.

terms of deal perception to cover up the true level of service gratuities and present all-inclusive prices to their customers. In fact, this point has been taken by a growing number of restaurants including Per Se, which made the headlines in 2005 by initiating automatic service gratuities of 20% on its menus in lieu of voluntary tipping (Bly, 2005). Now the restaurant instead prices its two nine-course tasting menus at \$275 each with service included.

On the other hand, although findings from the present research indicated that restaurants may benefit in terms of consumers' deal perceptions by listing a service gratuity below 15% for their *prix fixe* menus, several caveats are in order. First, I only tested a gratuity level modestly below the standard 15% (i.e., 12%). Therefore, the results may not hold up for more extreme values. Second, in the experiment, I controlled participants' service quality perception by explicitly telling them that the service quality of the restaurant is satisfactory. In reality, however, stating service gratuities below 15% may bring about negative expectations or perceptions of the service quality due to consumers' positive price-quality association (Lichtenstein & Burton, 1989; Monroe, 1973; Rao & Monroe, 1989) and eventually spoil the overall deal perception.

As for whether to present service gratuity as a percentage level or in a dollar amount, the results suggested that there was only marginally significant difference between the two formats. There is little doubt that a dollar-denominated service gratuity tends to hinder participants' judgment on the surcharge level and hence reduce the evaluability of the surcharge. However, consumers may take different approaches to deal with this ambiguity other than anchor on the standard 15% and

compare its converted dollar amount with the observed dollar gratuity as I proposed.

Further research is needed to address this complex issue.

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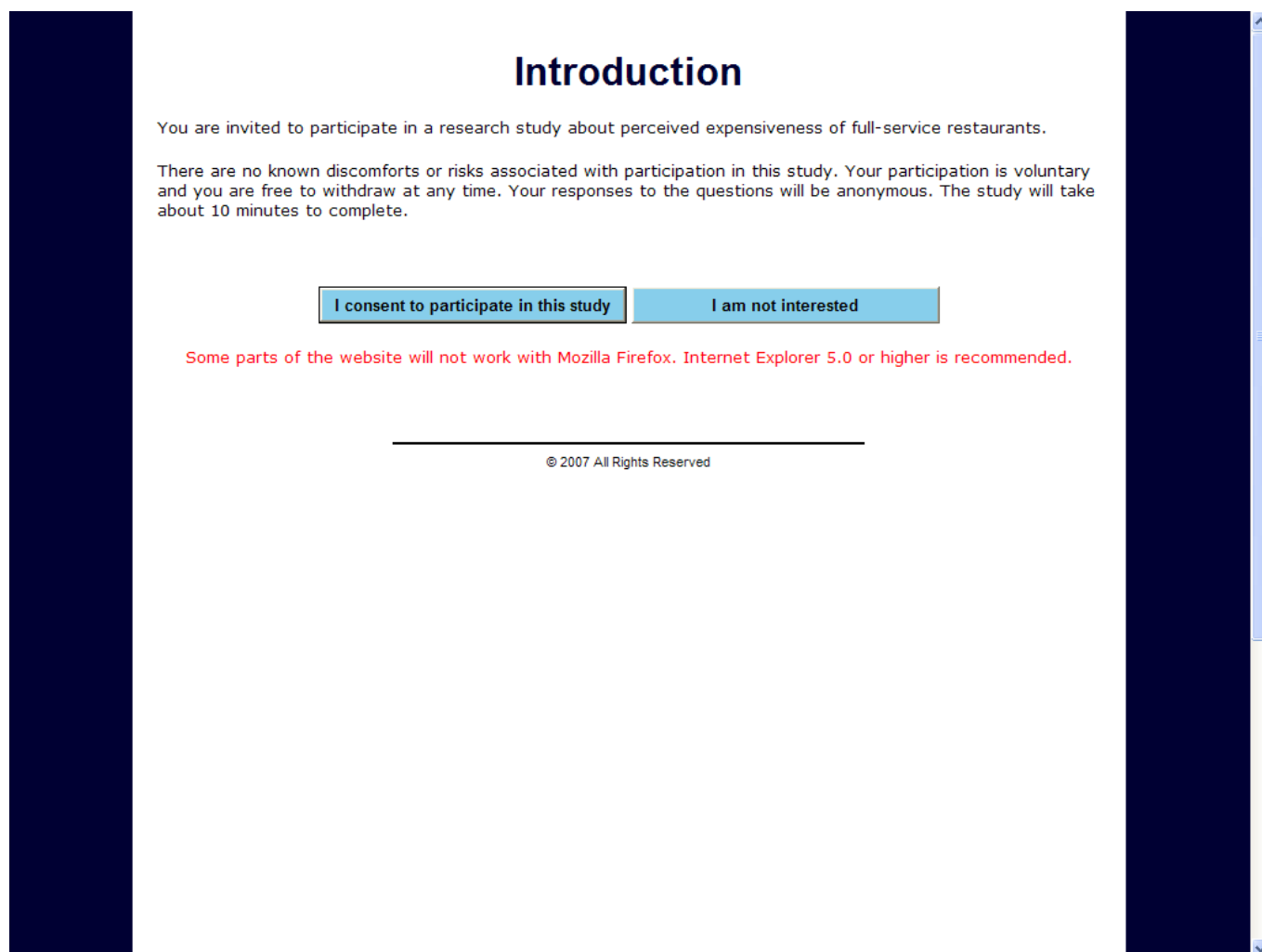
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## APPENDIX A: SCREEN SHOT OF THE ONLINE EXPERIMENT



## Instructions

Suppose that you are dining with a friend at a full-service restaurant before seeing a Broadway show. Nearly 70 percent of the business for this restaurant is from theatre goers. Theatre goers often have time constraints on how long they can spend at a restaurant before their show starts. Therefore, in order to streamline operation and cut down serving time, this restaurant offers a three-course prix fixe pre-theatre dinner menu from which guests can choose one appetizer, one main course and one dessert out of four options each. Taxes are built into the prix fixe menu prices and servers are not allowed to accept voluntary tips. Online reviews about this restaurant indicate that the service is generally good (e.g., 4 out of 5 excellence rating) and pretty consistent.

In the next screen, you will see the restaurant's menu with price information. After reading the menu and making your choice, you will be asked to answer several questions based on your knowledge about this restaurant. There is also a general background survey in the end of the study.

Thank you for your participation in this study.

[Start the Experiment](#)

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## Pre-Theater Menu

***(Choose one from each course)***

**\$37.76 per person including service gratuity**  
**No tips allowed**

### APPETIZER

- ☐ Providence Soup
- ☐ Artichoke and Bean Salad
- ☐ Grilled Chicken Caesar
- ☐ Pickled Swiss Chard and Almonds

### MAIN COURSE

- ☐ Roasted Duck with Butter and Sage
- ☐ Glazed Wild Alaskan Salmon
- ☐ Grilled Mushrooms with Rice Pilaf
- ☐ Beef Medallions with Herb Lobster Sauce

### DESSERT

- ☐ Tiramisu
- ☐ Cheese Cake
- ☐ Apple Walnut Tart
- ☐ Passion Fruit Sorbet

**Available from 5:00 pm - 7:00 pm**  
**Please note that all menu selections are subject to change without prior notice**

Next

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# Pre-Theater Menu Survey

Please indicate your answers to the following questions without going back to the menu:

I think the pre-theater dinner is:

Very cheap ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very expensive

The pre-theater dinner provides good value for money:

Very much disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very much agree

The pre-theater dinner represents:

A very bad deal ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 A very good deal

What level of service quality would you expect to receive for the pre-theatre dinner:

Very poor ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 Very high

Please recall and write down the total cost for the pre-theatre dinner: \$

This restaurant charges an all-inclusive price, with no separate service gratuity. In your opinion, what amount of the all-inclusive price goes toward the included gratuity?  
\$

Next

## Pre-Theater Menu

***(Choose one from each course)***

**\$32.00 per person plus 18% service gratuity  
No tips allowed**

### APPETIZER

- ☐ Providence Soup
- ☐ Artichoke and Bean Salad
- ☐ Grilled Chicken Caesar
- ☐ Pickled Swiss Chard and Almonds

### MAIN COURSE

- ☐ Roasted Duck with Butter and Sage
- ☐ Glazed Wild Alaskan Salmon
- ☐ Grilled Mushrooms with Rice Pilaf
- ☐ Beef Medallions with Herb Lobster Sauce

### DESSERT

- ☐ Tiramisu
- ☐ Cheese Cake
- ☐ Apple Walnut Tart
- ☐ Passion Fruit Sorbet

**Available from 5:00 pm - 7:00 pm  
Please note that all menu selections are subject to change without prior notice**

**Next**

---

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## Pre-Theater Menu Survey

Please indicate your answers to the following questions without going back to the menu:

I think the pre-theater dinner is:

Very cheap ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very expensive

The pre-theater dinner provides good value for money:

Very much disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very much agree

The pre-theater dinner represents:

A very bad deal ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 A very good deal

What level of service quality would you expect to receive for the pre-theatre dinner:

Very poor ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 Very high

Please recall and write down the total cost for the pre-theatre dinner: \$

Please recall and write down the automatic gratuity for the pre-theatre dinner:  %

The automatic gratuity for the pre-theatre dinner is:

Too small ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Too large

What dollar amount do you think is represented by the percentage automatic gratuity:

\$

Next

Done

Internet

80%

# Pre-Theater Menu

*(Choose one from each course)*

**\$32.00 per person plus \$3.84 service gratuity**  
**No tips allowed**

## APPETIZER

- ☐ Providence Soup
- ☐ Artichoke and Bean Salad
- ☐ Grilled Chicken Caesar
- ☐ Pickled Swiss Chard and Almonds

## MAIN COURSE

- ☐ Roasted Duck with Butter and Sage
- ☐ Glazed Wild Alaskan Salmon
- ☐ Grilled Mushrooms with Rice Pilaf
- ☐ Beef Medallions with Herb Lobster Sauce

## DESSERT

- ☐ Tiramisu
- ☐ Cheese Cake
- ☐ Apple Walnut Tart
- ☐ Passion Fruit Sorbet

**Available from 5:00 pm - 7:00 pm**  
**Please note that all menu selections are subject to change without prior notice**

Next

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Internet

100%

## Pre-Theater Menu Survey

Please indicate your answers to the following questions without going back to the menu.

I think the pre-theater dinner is:

Very cheap ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very expensive

The pre-theater dinner provides good value for money:

Very much disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very much agree

The pre-theater dinner represents:

A very bad deal ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 A very good deal

What level of service quality would you expect to receive for the pre-theatre dinner:

Very poor ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 Very high

Please recall and write down the total cost for the pre-theatre dinner: \$

Please recall and write down the automatic gratuity for the pre-theatre dinner: \$

The automatic gratuity for the pre-theatre dinner is:

Too small ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Too large

What percentage (of the cost of the three-course-meal) do you think is represented by the automatic dollar gratuity:  %

Next

Internet

80%



## End of Experiment Survey

Please answer the following questions based on your personal experience:

- In general, how much do you tip for good service at full-service restaurants? (fill in one only)  % or \$

- If a restaurant does not accept voluntary tips but adds service gratuities automatically to your bill, how much would you expect it to charge?  %

- If you dine out at a full-service restaurant where tipping is not allowed but instead built into the menu price, how much higher percentage wise than normal do you expect the prices would have to be to cover the servers' wages?  %

- How common is it for a restaurant charging automatic service gratuities for fixed menus to present those gratuities in dollar terms other than percentage terms (e.g., \$1.50 service gratuity of a \$10.00 menu rather than 15% service gratuity of a \$10.00 menu)?

Very uncommon ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 Very common

- How much personal control does each of the following tipping policies give you as a customer of a restaurant?

Customary tipping	Very little <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 Very much
Automatic gratuity of 18% on all checks	Very little <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 Very much
Automatic gratuity of 23% on all checks	Very little <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 Very much
Automatic gratuity of 12% on all checks	Very little <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 Very much
No tipping allowed (building service surcharge into the menu prices)	Very little <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 Very much

- How acceptable are the following tipping policies to you when you dine out at full-service restaurants?

Customary tipping	Very unacceptable	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	Very acceptable
Automatic gratuity of 18% on all checks	Very unacceptable	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	Very acceptable
Automatic gratuity of 23% on all checks	Very unacceptable	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	Very acceptable
Automatic gratuity of 12% on all checks	Very unacceptable	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	Very acceptable
No tipping allowed (building service surcharge into the menu prices)	Very unacceptable	<input type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5	<input type="radio"/> 6	<input type="radio"/> 7	Very acceptable

Please tell us about yourself.

1. How old are you?  years old

2. Sex: ☐ Male ☐ Female

3. Race: ☐ White ☐ Black ☐ Hispanic ☐ Asian ☐ Mixed/others

4. Are you a US citizen or permanent resident? ☐ Yes ☐ No

5. Which of the following categories does your household income fall into?

☐ \$0 - \$25,000 ☐ \$25,001 - \$50,000 ☐ \$50,001 - \$100,000 ☐ \$100,001 or more

6. What is the highest level of formal education you have completed?

Please tell us about yourself.

1. How old are you?  years old

2. Sex: ☐ Male ☐ Female

3. Race: ☐ White ☐ Black ☐ Hispanic ☐ Asian ☐ Mixed/others

4. Are you a US citizen or permanent resident? ☐ Yes ☐ No

5. Which of the following categories does your household income fall into?

☐ \$0 - \$25,000 ☐ \$25,001 - \$50,000 ☐ \$50,001 - \$100,000 ☐ \$100,001 or more

6. What is the highest level of formal education you have completed?

☐ Some school ☐ High school graduate ☐ Some college ☐ College graduate ☐ Post-graduate

7. Indicate your familiarity with US restaurant tipping customs:

Very unfamiliar ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very familiar

8. On average, how many times per month do you dine out at full-service restaurants?  times per month

## CHAPTER 2

### DECOMPOSING THE EFFECTS OF VOLUNTARY VERSUS MANDATORY SERVICE GRATUITY ON MENU PRICE PERCEPTION AND DEMAND

#### *Introduction*

Although leaving a 15 to 20 percent voluntary gratuity or tip at table-service restaurants is a well-entrenched social norm in the United States, the practice of automatically adding service gratuities to customers' bills has been on the rise in recent years. Whereas the shift from instituting voluntary tipping to imposing a mandatory service gratuity has fueled a great deal of discussion about the pros and cons of each policy in academic journals, trade magazines as well as mass media, most of the argument was made from organizational and/or human resources perspectives (Bly, 2005; Kwortnik, Lynn, & Ross, 2009; Lynn, Jabbour, & Kim, 2012; Lynn, Kwortnik, & Sturman, 2011; Lynn & Withiam, 2008; Vaughan, 2010). The potential influence of different surcharge policies for restaurant service on consumer behavior and their implications for marketing practice have been largely ignored.

The research reported here attempts to address this gap by empirically examining consumer reactions to a menu price with 15% customary tipping versus the same price with a 15% mandatory service gratuity. I argue that both types of surcharge for restaurant service can be broadly viewed as forms of price partitioning. Note that, in the former case, the service gratuity is in effect voluntary. Even though the restaurant suggests a customary amount of 15% of the pre-tax subtotal according to the social norm of tipping, customers themselves ultimately decide whether to tip and

how much to tip. In the latter case, however, the service gratuity is compulsory and automatically added to the check. Customers must pay the exact amount specified by the restaurant.

In the context of Sunday brunch flyer evaluation, I showed through three online experiments that participants tend to perceive a brunch price with 15% customary tipping as less expensive than the same price with a 15% mandatory service gratuity. In addition, participants also indicated higher patronage intent for the restaurant with voluntary tipping than that with a corresponding mandatory service gratuity. More important, I demonstrated that two distinct psychological mechanisms underlie the differential impact of voluntary versus mandatory service gratuity on consumers' price evaluation. First, there is a differential processing effect. For the same menu price, participants who encounter voluntary tipping are more likely to disregard the surcharge information than those who are exposed to equivalent mandatory service gratuities. Second, on top of this processing difference, there is a differential evaluation effect. In particular, I suggest that even when participants similarly attend to and process both types of surcharges, differences in their subjective evaluation of restaurant expensiveness can arise because people are inclined to perceive voluntary tips as more fair than mandatory service gratuities of comparable magnitude.

In the next section, I first review relevant literature on behavioral pricing and develop mediation models that elucidate the effects of voluntary versus mandatory service gratuity on consumers' menu price perception and demand. I then describe three online experiments designed to test the hypotheses and evaluate the proposed

models. The paper concludes with a discussion on the implications, limitations and suggestions for future research.

### ***Conceptual Framework and Hypotheses Development***

Price partitioning refers to the practice of breaking up a single price of a product and/or service into a base price plus one or more surcharges and presenting them individually to consumers. Previous research on price partitioning has mainly focused on contrasting consumer reactions to partitioned versus combined presentation of the same price and found strong empirical evidence against the principle of description invariance prescribed by standard economics theory (Tversky, Sattath, & Slovic, 1988). In particular, it has been shown that presenting the price of an offer in separate parts rather than as a consolidated whole influences price evaluation and choice.

However, it remains unclear whether replacing the voluntary surcharge of a partitioned price with an equivalent mandatory fee will affect consumers' price perception and demand. Conceivably, consumers may opt to pay significantly less when the surcharge is discretionary than when it is compulsory. As a result, the total purchase costs with a voluntary surcharge tend to be lower than those with a mandatory one. This is not always the case, however, for restaurant service gratuities. Although restaurant patrons could leave any amount of or even no tip when service gratuity is voluntary, the social norm of tipping often prompts them to tip within the standard 15 to 20 percent for satisfactory service. Given that the majority of mandatory service gratuities at restaurants also fall within the same range, the critical

difference between the two pricing policies hence lies in the voluntary versus non-voluntary nature of the surcharge rather than the level of the surcharge.

To answer the question of whether and why presenting a 15% surcharge for the same menu price as either a customary tip or a mandatory service gratuity will induce different consumer reactions, I drew on extant research on behavioral pricing and proposed two distinct psychological mechanisms that may mediate the framing effect of voluntary versus mandatory surcharge on price evaluation. First, I maintain that consumers are more likely to disregard a 15% surcharge for restaurant service as a customary tip than as a mandatory service gratuity in their price evaluation. It has been shown that people are prone to attend to and process the secondary price component (i.e., the surcharge) of a partitioned price inadequately, especially when they are presented as a percentage of the primary price component (i.e., the base price) (Estelami, 1999; Morwitz, Greenleaf, & Johnson, 1998; Xia & Monroe, 2004). This is because integrating the percentage surcharge with the base price involves both multiplication and addition and hence requires more cognitive efforts than consumers want to spend (Estelami, 1999). Instead, they are likely to ignore the surcharges or use mental shortcuts such as anchoring and adjustment to process partitioned prices (Morwitz et al., 1998). It follows that the percentage presentation of the surcharge should render both voluntary tips and mandatory service gratuities susceptible to selective attention and heuristic processing. I argue, however, that voluntary tips tend to be less salient than comparable mandatory service gratuities in other aspects, making them even more elusive in price judgment.

In a conceptual paper, Kim and Kachersky (2006) proposed four key

dimensions of price salience and suggested that, in a multi-dimensional price, the amount of attention paid to the surcharge will be contingent on its relative salience to the primary price component. Based on their framework, I believe that voluntary tips tend to be less salient both visually and semantically than the corresponding mandatory service gratuities for the same menu price. First of all, because voluntary tipping is the norm, restaurants complying with this convention often make no mention of tipping policy on their menus and advertising flyers. On the other hand, restaurants that choose to implement mandatory service gratuities instead of tipping are strongly recommended having a stated surcharge policy in place to ensure that customers pay due attention to it and thus they are not caught off guard by forced tipping. Consequently, mandatory service gratuities tend to be more visually prominent than voluntary tipping and hence should command more attention. Second, even holding difference in visual salience constant as I did in the studies<sup>4</sup>, consumers are still more likely to direct their attention to mandatory rather than voluntary surcharges. This is because the two types of surcharges also differ in specific wording. According to (Berlyne, 1960), words like “mandatory”, “obligatory” or “required” may operate as conditional indicating stimuli that alert people to re-focus their attention. Finally, research in social psychology suggests that salience is often produced by novelty and unexpectedness. Therefore, when mandatory service gratuities disconfirm people’s expectation of the tipping norm, they should draw greater attention.

Another possible reason why consumers tend to ignore surcharges more often

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<sup>4</sup> In order to control individual differences in tipping propensity, in the voluntary tipping condition, I employed a clearly stated 15% customary tipping policy. This manipulation thus may equate the visual salience between voluntary and mandatory service gratuities.



under voluntary tipping than under mandatory gratuities is that they may find voluntary tips, but not mandatory service gratuities, irrelevant to price judgment. Some researchers suggested that perceived expensiveness is a market-framed evaluation (Garbarino & Slonim, 2003). According to the compatibility principle (Tversky et al., 1988), people assign more weight on input information that is framed similar to the output measure. Consequently, when asked to evaluate the expensiveness of a product's price, consumers are more likely to use market-level information such as the fair price of the product and less likely to consider personal-level information such as their individual preferences. Following this line of reasoning, I suppose that consumers are likely to take into account mandatory service gratuities when they evaluate menu prices. This is because these compulsory surcharges, like the menu prices they attach to, are determined by the restaurants and hence represent market behavior. On the other hand, the voluntary tips consumers opt to leave are less likely to influence their perceived expensiveness of the menu price because how much to tip is essentially a personal decision or individual propensity. Based on the above discussion I propose that:

*H1: Given the same menu price, consumers are more likely to disregard the surcharge under 15% customary tipping than under a 15% mandatory service gratuity.*

Over and above the perceptual and processing differences, I propose that consumers also diverge in their evaluative judgments on voluntary versus mandatory surcharge for restaurant service. In particular, I claim that consumers tend to perceive a 15% surcharge framed as a customary tip as more fair than that framed as a

mandatory service gratuity.

Price fairness refers to the judgment of whether a price is reasonable, acceptable, or justifiable (Bolton, Warlop, & Alba, 2003; Lichtenstein & Bearden, 1989; Xia, Monroe, & Cox, 2004). Prior research on price partitioning has demonstrated that the relative magnitude of the surcharge to the base price negatively influences the perceived fairness of the surcharge (Cheema, 2008; Sheng, Bao, & Pan, 2007). In the current research, however, differences in perceived fairness between voluntary and mandatory service gratuity cannot be attributed to the surcharge level because I hold it constant at 15% of the menu price. Instead, I believe that the differential fairness perceptions on the two types of surcharges may stem from several other factors.

First, consumers may perceive mandatory service gratuities as less fair than the corresponding customary tips because voluntary tipping is the common practice in the restaurant industry. It has been suggested that industry norms, even those appear somewhat random, contribute positively to consumers' fairness perception (Heyman & Mellers, 2008). Consequently, everything else being equal, a deviation from industry norms should reduce consumer fairness perception. Second, a shift from voluntary tipping to mandatory gratuities is likely to jeopardize consumers' sense of power and control in the transaction. Research on participative pricing such as auctions and name your own price (NYOP) has shown that consumers have greater fairness perceptions when they play a role in the price-setting process than when the seller sets the prices (Chandran & Morwitz, 2005; Haws & Bearden, 2006). Because voluntary tipping affords consumers the discretionary power to decide on the amount

of surcharge for restaurant service whereas mandatory service gratuities deprive consumers of this authority, I suggest that consumers will find voluntary tipping as more fair than the corresponding mandatory service gratuities.

*H2: Given the same menu price, consumers perceive the 15% surcharge for restaurant service under voluntary tipping as more fair than under mandatory gratuities.*

Based on the above discussion, I put forward a parallel mediation model that helps us to predict and explain the differential effects of voluntary versus mandatory service gratuity on menu price perception. First, in the information processing process, I maintain that consumers are more likely to ignore voluntary tipping than mandatory service gratuities of comparable magnitude. Thus, on the aggregate level, those exposed to 15% customary tipping will perceive the same menu price as lower or less expensive than those exposed to a 15% mandatory service gratuity.

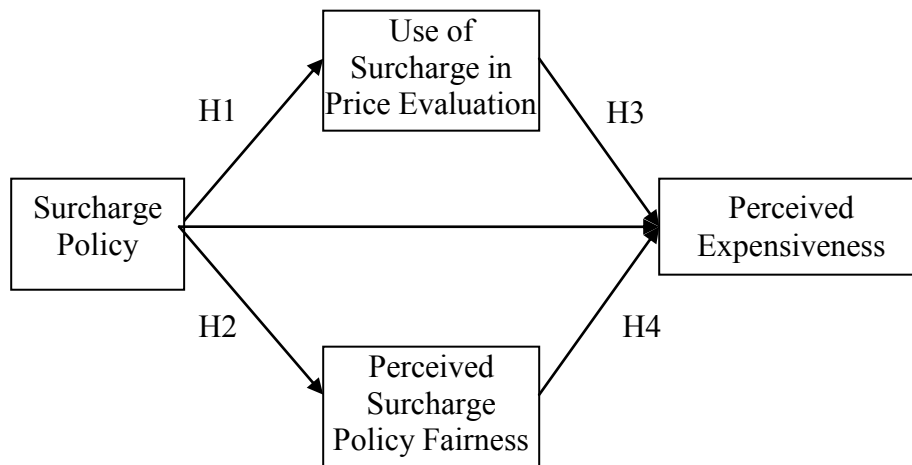
*H3: Consumers' use (or lack thereof) of surcharge information when they evaluate a partitioned price enhances (reduces) their expensiveness perceptions.*

Second, in the information evaluation process, I propose that consumers tend to have greater fairness perceptions on 15% customary tipping than on 15% mandatory service gratuities for the same menu price. Extant research has suggested that consumers are more price sensitive and feel more “pain of paying” when the price is perceived as less fair (Schindler, Morrin, & Bechwati, 2005; Sinha & Batra, 1999). Consequently, I argue that consumers' perception of price expensiveness will be negatively influenced by their perception of price fairness.

*H4: Consumers' perceived fairness on the surcharge negatively influences their perceived expensiveness of a partitioned price.*

Taken together, the preceding four hypotheses comprise my parallel mediation model of perceived menu price expensiveness as summarized in H5 and showed in Figure 3.1 below.

*H5: Consumers' use of surcharge information in price evaluation and perceived surcharge policy fairness mediate the relationship between surcharge policy and the perceived expensiveness of a partitioned price such that menu prices with 15% customary tipping will be perceived as less expensive than those with a 15% mandatory service gratuity.*



**Figure 2.1 The parallel mediation model of perceived menu price expensiveness**

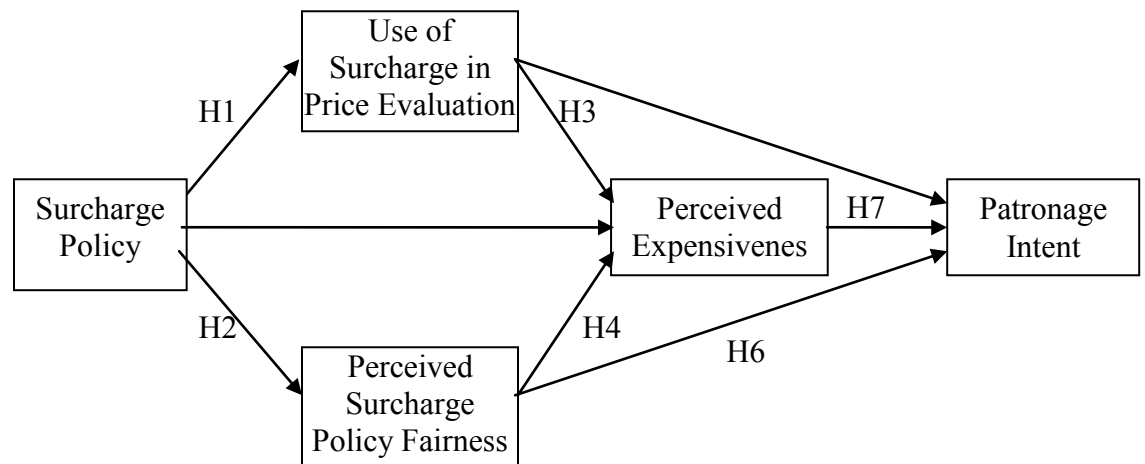
Additionally, I suppose that the differential effects of voluntary versus mandatory service gratuity influence not only consumers' price perception but also

their patronage intent. Previous studies have demonstrated that perceived fairness of the surcharge can increase willingness to bid and purchase likelihood (Haws & Bearden, 2006; Sheng et al., 2007). Accordingly, holding all other factors constant, consumers are more likely to go to restaurants with 15% customary tipping than those with a 15% mandatory service gratuity because they consider the formers' surcharge policy more fair. In addition, the more favorable price perception associated with 15% customary tipping may translate into a higher demand as suggested by previous studies (Morwitz et al., 1998). I accordingly propose that:

*H6: Consumers' perceived fairness on the surcharge of a partitioned price positively influences their patronage intent.*

*H7: Consumers' perceived expensiveness on a partitioned price negatively influences their patronage intent.*

All in all, the above hypotheses together comprise my mediation model of patronage intent, as shown in Figure 3.2 and summarized in H8 below:



**Figure 2.2 The mediation model of patronage intent**

*H8: Consumers' perceived surcharge policy fairness and perceived expensiveness of a partitioned price mediate the relationship between surcharge policy and their patronage intent such that they are more likely go to the restaurant with 15% customary tipping than that with a 15% mandatory service gratuity for the same menu price.*

### **Study 1**

Study 1 was primarily designed to demonstrate the differential effects of different surcharge policies on price perception. Specifically, I expect that consumers perceive a menu price with 15% customary tipping as less expensive than the same price with a 15% mandatory service gratuity. Although not the focus of the current research, the effect of price partitioning relative to price consolidating was also examined in this study. Previous research has shown that partitioned prices often lead to better price perception than comparable consolidated prices (Lee & Han, 2002; Morwitz et al., 1998; Xia & Monroe, 2004). I tested the robustness of this finding in Study 1 by comparing two different types of partitioned menu prices with the corresponding all-inclusive menu prices.

### **Method**

#### **Participants**

I recruited participants for all three studies through Amazon's Mechanical Turk ([www.MTurk.com](http://www.MTurk.com)). Although still in its infancy, MTurk has gained increasing

popularity among psychology and other social science researchers in recent years and proved to be a good source to obtain high-quality data inexpensively and quickly (Buhrmester, Kwang, & Gosling, 2011).

Two hundred and seventy participants responded to a job listing (a.k.a. HIT) on MTurk website to take a short online survey about the effectiveness of restaurant advertising flyers. They were paid a small amount of money for participating in the study.<sup>5</sup> Forty-six of them did not complete the survey and were excluded from the analyses. Out of the 224 participants included in the analyses, 50% were men and 82% were Caucasian. Their ages ranged from 18 to 65, with the average being 31.32. Slightly less than half of the participants (i.e., 45%) were college graduates. Twenty-five percent of the participants reported a household income less than \$25,000 a year, 35% reported between \$25,001 and \$50,000, 31% reported between \$50,001 and \$100,000, and 9% reported more than \$100,000 a year. Their average dining out frequency at full-service restaurants was four times per month, with a low response of zero time per month and a high response of 20 times per month. Thus, this sample represented a diverse set of restaurant patrons.

### Design and Procedure

Participants in Study 1 were required to imagine that they want to have a brunch in the coming Sunday and that they are considering to choose from two local restaurants famous for Sunday brunches. They were told that they have never been to either restaurant before but have heard that the quality of food and service at both

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<sup>5</sup> Across the three studies I paid participants 25 to 50 cents for their responses.

restaurants is pretty good. Next, participants were shown the Sunday brunch flyer for each of the two restaurants sequentially on the computer screen. Each flyer contains basic information about the Sunday brunch at respective restaurant including the featured food items, price with any applicable surcharges, starting and ending times as well as the address and reservation number. The flyer is text-only without any pictures of food items or the exterior/interior views of the restaurant (please see appendix for the experiment stimuli of Study 1).

The Sunday brunch flyer of restaurant A was identical across all participants and was used to establish a baseline condition for the subsequent evaluation of the Sunday brunch flyer of restaurant B. The Sunday brunch at restaurant A is priced at \$9.75 per person with no mention of any surcharges, hence implying that voluntary tipping norm applies at that restaurant. The Sunday brunch flyer for restaurant B varied across participants with regard to surcharge policies. For about one-third of the participants, the Sunday brunch at restaurant B is priced at \$8.95 per person plus 15% automatic service gratuity. For the other one-third of the participants, they were presented with the same brunch price, but told that tipping is voluntary and it is customary for restaurant patrons to leave 15% as tips. Finally, the rest of the participants saw a consolidated price of “\$10.25 per person inclusive of gratuity (no tipping allowed)”, which is about 15% higher than the \$8.95 brunch price in the other two conditions<sup>6</sup>.

After reading each flyer, participants were first requested to state their perception of restaurant expensiveness on a two-item, 7-point Likert scale ranging

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<sup>6</sup> The equivalent consolidated price for \$8.95 plus 15% surcharge is \$10.29. Because I want to use 5-ending prices for all conditions, I adjusted the service-inclusive price downward to \$10.25.



from 1 (extremely inexpensive/extremely low-priced) to 7 (extremely expensive/extremely high-priced). Next participants indicated the likelihood of going to the restaurant for Sunday brunch on a 7-point Likert scale with 1 = very unlikely and 7 = very likely. I then asked participants to rate their expected quality of food and service for the Sunday brunch on a 7-point scale anchored by “very poor / very high” as well as evaluate the attractiveness of the flyer on a 7-point scale anchored by “very unattractive / very attractive”. The perceived quality measure was used as a covariate to control for consumers’ price-quality association in the subsequent analyses. The flyer evaluation measure served as a filler question consistent with the flyer evaluation cover story. Finally, for the flyer of restaurant B, participants were asked to identify the surcharge policy used at that restaurant. In the end of the survey, data about participants’ tipping habits and attitudes as well as their demographic information were collected (please see appendix for the questionnaire of Study 1).

## **Results**

### **Manipulation Checks**

About 79% (176 out of 224) participants correctly identified the surcharge policy at restaurant B, suggesting that the majority of participants attended to the surcharge information in restaurant B’s flyer. Hence the manipulation was successful in producing the intended differences in perceived surcharge policies.

### **The Influence of Individual Tipping Propensity on Perceived Expensiveness**

To investigate the potential influence of individual tipping propensity on perceived expensiveness, I asked participants to indicate their typical tip size in percentage in the end of the survey. Given the open-ended response format, I examined whether there were problematic data such as extreme outliers. I first manually corrected invalid input that can be ascribed to format mix-ups.<sup>7</sup> I then recoded two unrealistically large tip percentages (70 and 80 percent) as 30%. The transformed typical tip sizes thus ranged from 5% to 30% with a mean of 17% and a mode of 20%. Finally, I standardized the typical tip size with a mean of zero for the analyses reported below.

First, it could be argued that big tippers, probably due to their higher income level, are less sensitive to menu prices than small tippers. Therefore, for participants in all conditions, I expected a negative correlation between individual tipping propensity and perceived menu price expensiveness. However, the data showed that the correlation between typical tip size and perceived expensiveness of restaurant B was not significant ( $r = -.082$ ,  $n = 224$ ,  $p = .22$ ).

Second, recall that in order to control individual differences in tipping propensity so that discrepancies in perceived expensiveness among surcharge policies cannot be attributed to factors other than the nature of the surcharge, I used 15% customary tipping in the voluntary condition. However, it is possible that participants exposed to 15% customary tipping ignore the suggested 15% gratuity level and assess the expensiveness of the menu price based on individual typical tip size. If this is the case, individual tipping propensity should moderate the relationship between

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<sup>7</sup> For example, one participant entered 0.2 for his/her typical tipping percentage level. I changed 0.2 to 20, assuming that the participants did not pay attention to the “percent” following the text entry filed.

surcharge policy and perceived expensiveness such that participants perceive brunch prices with 15% customary tipping as more expensive than those with 15% mandatory service gratuity or corresponding service-inclusive prices the greater their reported typical tip size. To examine this possibility, I regressed the expensiveness ratings of restaurant B on typical tip size and surcharge policy (dummy coded so that each was contrasted with 15% customary tipping). Perceived expensiveness of restaurant A (Cronbach's  $\alpha = 0.90$ ) was included as a covariate. The interaction terms between typical tip size and surcharge policy dummies were then added to the model. The main effects model accounted for 47.9% of the variance in the dependent variable and produced significant effects for 15% mandatory service gratuity ( $B = .345$ ,  $t(219) = 2.338$ ,  $p = .02$ ) and service-inclusive prices dummies ( $B = .948$ ,  $t(219) = 6.36$ ,  $p < .001$ ) as well as the perceived expensiveness of restaurant A ( $B = .694$ ,  $t(219) = 12.686$ ,  $p < .001$ ). However, the coefficient for typical tip size was not significant ( $B = -.056$ ,  $t(219) = -.926$ ,  $p = .356$ ). In addition, for the full model, none of the interactions between typical tip size and the surcharge policy dummies reached statistical significance (all  $ps > .24$ ).

Taken together, the data suggested that individual tipping propensity had no influence on participants' price perception and that participants in the 15% customary tipping condition do not seem to use their typical tip size in place of the suggested 15% tipping level when evaluating the expensiveness of the Sunday brunch. I hence dropped this variable in subsequent analyses.

### The Differential Effects of Surcharge Policy on Perceived Expensiveness

As discussed earlier, in order to adjust for the baseline difference in price perception among participants, I collected their perceived expensiveness ratings on restaurant A and used it as a covariate for analyses on perceived expensiveness of restaurant B. However, consumers may also use simple heuristics to gauge their price perception. For example, there is some evidence suggesting that the majority of restaurants impose mandatory service gratuities in lieu of voluntary tipping tend to be upscale establishments. If consumers associate mandatory service gratuities with high-end restaurants, this association may influence their perceived expensiveness of the menu price. To control the effect of surcharge policy-restaurant class association on price perception, I asked participants, in the end of the survey, to indicate whether voluntary tipping, 15% mandatory service gratuity and service-inclusive prices are more common among upscale restaurants than among less expensive ones respectively. Their answers to these questions, together with their perceived expensiveness ratings on restaurant A and the expected quality for restaurant B, were all included as covariates in an analysis of covariance (ANCOVA) with perceived expensiveness of restaurant B (Cronbach's  $\alpha = 0.88$ ) as the dependent variable and surcharge policy as the independent variable (please see table 2.1). I sequentially removed the non-significant covariates in the initial model and the only significant one remaining in the final model was participants' perceived expensiveness ratings on restaurant A ( $F(1, 220) = 163.418, p < .001, \eta_p^2 = .426$ ).

Results from the final ANCOVA model revealed a significant difference in perceived expensiveness of restaurant B among three different surcharge policies ( $F(2, 220) = 20.60, p < .001, \eta_p^2 = .158$ ). Planned contrasts were used to examine the

differential effects of surcharge policy as well as the positive impact of price partitioning over price consolidating on menu price perception. First, in line with my expectation, participants perceived a Sunday brunch price with 15% customary tipping

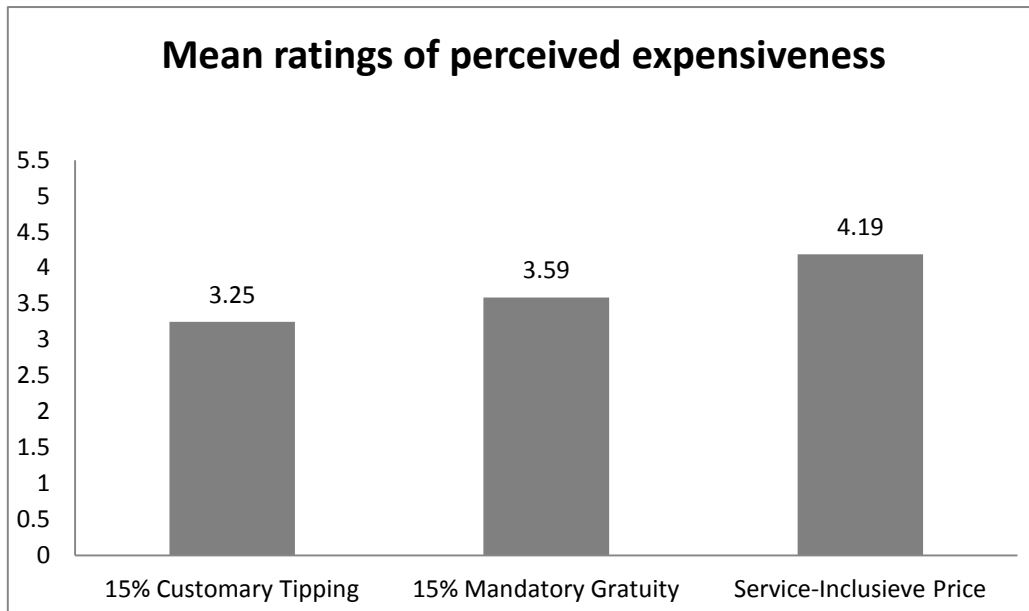
**Table 2.1 One-way ANCOVA of perceived expensiveness (initial model)**

Tests of Between-Subjects Effects						
Dependent Variable: PercExpensivenessB						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	169.337 <sup>a</sup>	7	24.191	29.639	.000	.490
Intercept	.603	1	.603	.739	.391	.003
PercExpensivenessA	126.701	1	126.701	155.236	.000	.418
VTupscale	2.184	1	2.184	2.675	.103	.012
AGupscale	.092	1	.092	.112	.738	.001
Glupscale	.000	1	.000	.000	.984	.000
QualityExpect	1.750	1	1.750	2.145	.145	.010
cond	31.324	2	15.662	19.189	.000	.151
Error	176.296	216	.816			
Total	3365.750	224				
Corrected Total	345.633	223				

a. R Squared = .490 (Adjusted R Squared = .473)

( $M = 3.25$ ) as significantly less expensive than the same price with a mandatory 15% service gratuity ( $M = 3.59$ ;  $F(1, 220) = 5.574$ ,  $p = .019$ ,  $\eta_p^2 = 0.025$ ). Moreover, participants rated the partitioned Sunday brunch prices ( $M = 3.42$ , the average expensiveness ratings of Sunday brunch prices with 15% customary tipping and those

with mandatory 15% service gratuity) as less expensive than comparable service-inclusive Sunday brunch prices ( $M = 4.19$ ;  $F(1, 220) = 35.749$ ,  $p < .001$ ,  $\eta_p^2 = 0.14$ ). This result corroborates previous research on the favorable impact of price partitioning on price perception (please see Figure 2.3).



**Figure 2.3** The mean ratings of perceived expensiveness among three different surcharge policies for the Sunday brunch

## Discussion

Overall, findings of Study 1 showed strong evidence of the differential effects of different surcharge policies on price perception such that participants tend to perceive restaurants with 15% customary tipping as less expensive than those with a 15% mandatory service gratuity in the context of evaluating Sunday brunch flyers. In addition, I replicated and extended previous findings of the positive impact of price partitioning on price perception by examining partitioned menu prices with either

voluntary or mandatory service gratuities and comparing them together with the corresponding service-inclusive prices. I also ruled out the alternative explanation that differences in perceived expensiveness are a result of simple heuristics associating restaurant classes with surcharge policies. Finally, I investigated the potential influences of individual tipping propensity on price perception. The data showed that participants' typical tip size did not influence their price perception on the whole and that participants in the voluntary tipping condition were unlikely to use individual typical tip size when evaluating the menu price.

However, in this preliminary study, I merely demonstrated the differential effects of voluntary versus mandatory service gratuity on menu price perception but did not explore hypotheses about the underlying mechanisms of those effects. Therefore, I conducted the following two main studies to investigate why consumers diverge in their reactions to different surcharge policies.

## ***Study 2***

The purpose of Study 2 was twofold. The first aim was to test my proposed mediation models that underlie the differential effects of voluntary versus mandatory service gratuity on menu price perception and demand. Moreover, I want to examine whether asking participants' to estimate the total expense before their price evaluation moderates the relationship between surcharge policy and perceived expensiveness. In my conceptual model, I argued that one of the two underlying processes, the differential processing effect, comes from the fact that consumers tend to ignore surcharge information more often under voluntary tipping than under corresponding

mandatory service gratuities. Therefore, if I direct participants' attention to the surcharge by asking them to determine total expense before price evaluation, the differences in perceived expensiveness between surcharge policies might be attenuated.

Hence I propose that:

*H9: Whether to ask participants to estimate their total expense before price evaluation moderates the relationship between surcharge policy and perceived price expensiveness.*

## **Method**

### **Participants**

Three hundred and fifteen participants responded to a job listing (a.k.a. HIT) on MTurk website to take a short online survey about the effectiveness of restaurant advertising flyers. They were paid a trivial amount of money for participating in the study. All of them completed the survey. Of the participants, 58% were men and 76% were Caucasian. Their ages ranged from 18 to 75, with the average being 39.56.

Slightly less than half of the participants (i.e., 45%) were college graduates. Twenty-five percent of the participants reported a household income less than \$25,000 a year, 34% reported between \$25,001 and \$50,000, 31% reported between \$50,001 and \$100,000, and 10% reported more than \$100,000 a year. Their average dining out frequency at full-service restaurants was four times per month, with a low response of zero time per month and a high response of 20 times per month. Thus, the profile of participants in Study 2 is very similar to that of Study 1.



## Design and Procedure

The experiment stimuli of Study 2 (please see appendix) were almost identical to those of Study 1, with only some minor changes to eliminate potential ambiguities.<sup>8</sup> The study was a 2 (surcharge policy for restaurant B: 15% customary tipping vs. 15% mandatory service gratuity) x 2 (the total expense awareness: presence vs. absence) between-participants design. In addition to the surcharge policy manipulation similar to that of Study 1, I asked half of the participants to determine their total spending, including any applicable tips or gratuities, if they went to restaurant B's Sunday brunch alone before they evaluated the expensiveness of that Sunday brunch. The other half was not presented with this question and reported their expensiveness ratings of restaurant B right after they saw the brunch flyer. The purpose of this manipulation was to examine whether reducing processing biases attenuates the difference in participants' perceived expensiveness ratings between the two surcharge policies. I suppose that asking participants to determine the total expenditure will channel their attention to both the brunch price and the surcharge information, regardless of whether the surcharge is a customary tip or a mandatory service gratuity. This directed focus on the total expense hence potentially makes participants more likely to use both price components in their price evaluation across surcharge policies. As a result, the differences in price perception between the two surcharge policies may be smaller when participants are made aware of the total expense than when they are not.

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<sup>8</sup> Based on the feedbacks from Study 1, I made changes to both flyers so that it is crystal clear to the participants that both restaurants offer "all-you-can-eat" style brunches including soft drinks. I also changed the heading of both flyers so they appealed more equally to participants.

Participants in Study 2 went through a procedure similar to that of Study 1. They were shown the Sunday brunch flyers for restaurant A and restaurant B in order on the computer screen and asked to answer some questions after reading each flyer. To explore psychological mechanisms underlying the differential effects of surcharge policy on price perception and demand, I included some additional process measures for restaurant B's evaluation. First, participants were asked to choose whether their expensiveness ratings for the Sunday brunch at restaurant B was based on the \$8.95 brunch price only, any applicable tips/surcharges only, or the total expense (i.e., the \$8.95 brunch price plus any applicable tips/surcharges). Second, I asked participants to allocate 10 chips between the \$8.95 brunch price and the surcharge (i.e., the amount of tip they voluntarily leave or the 15% mandatory service gratuity) to reflect the importance of each price component in their expensiveness assessments. Finally, participants' fairness perceptions on the surcharge policy used by restaurant B were collected using a 3-item 7-point semantic differential scale (unfair/fair, unreasonable/reasonable, unjustified/justified) adopted from previous research (Maxwell, 2002; Sheng et al., 2007). As a manipulation check, I again asked participants to identify the surcharge policy used at restaurant B (please see appendix for the questionnaire).

## **Results**

### **Manipulation Check**

I asked respondents to identify the surcharge policy used by restaurant B.

About 89% (281 out of 315) participants chose the right surcharge policy.

Consequently, I conclude that the manipulation was successful in producing the intended differences in perceived surcharge policies.

### The Influence of Individual Tipping Propensity on Perceived Expensiveness

To check the potential impact of individual tipping propensity on perceived expensiveness, I conducted similar analyses as in Study 1. I first calculated the correlation between participants' typical tip size and their perceived expensiveness of restaurant B. I then regressed the expensiveness ratings of restaurant B on typical tip size, the 15% mandatory service gratuity dummy, the total expense awareness dummy as well as the perceived expensiveness of restaurant A (Cronbach's  $\alpha = .90$ ). The interaction terms between typical tip size, surcharge policy and total recall awareness dummies were then added to the model.

As expected, for participants across all conditions, there was a significant negative correlation between typical tip size and perceived expensiveness of restaurant B ( $r = -.189$ ,  $n = 315$ ,  $p < .001$ ). The main effects model produced significant effects for 15% mandatory service gratuity ( $B = .278$ ,  $t(310) = 2.724$ ,  $p = .007$ ) and perceived expensiveness of restaurant A ( $B = .756$ ,  $t(310) = 16.537$ ,  $p < .001$ ), a marginally significant effect for typical tip size ( $B = -.098$ ,  $t(310) = -1.883$ ,  $p = .061$ ), and a non-significant effect for the total expense awareness dummy ( $B = .158$ ,  $t(310) = 1.552$ ,  $p = .122$ ). Thus, although I found a significant negative correlation between typical tip size and perceived expensiveness, regression results from the main effects model indicated that the influence of individual tipping propensity on price perception was

limited when perceived expensiveness of restaurant A was included as a covariate. Furthermore, all interaction terms from the full model, including the one between typical tip size and the 15% mandatory service gratuity dummy variable, did not reach statistical significance (all  $ps > .11$ ), suggesting that participants in the 15% customary tipping condition do not appear to use their typical tip size in their price evaluation. Based on these findings, I dropped tipping propensity in subsequent analyses.

#### The Moderating Role of Total Expense Awareness on Perceived Expensiveness

A 2 (surcharge policy) x 2 (the total expense awareness) ANCOVA on perceived expensiveness of restaurant B (Cronbach's  $\alpha = .96$ ) with surcharge policy and the total expense awareness as independent variables and perceived expensiveness of restaurant A, the expected quality of restaurant B as well as the three surcharge policy-upscale restaurant association ratings as covariates indicated that many of the covariates are not significant (please see table 2.2). I removed non-significant covariates in succession and in the end only participants' perceived expensiveness ratings on restaurant A remained significant ( $F(1, 310) = 289.13, p < .001, \eta_p^2 = .483$ ). The final ANCOVA model revealed a significant main effect of surcharge policy only such that participants perceived brunch price with 15% customary tipping ( $M = 3.41$ ) as less expensive than the same price with a 15% mandatory service gratuity ( $M = 3.70$ ) at restaurant B ( $F(1, 310) = 7.71, p < .01, \eta_p^2 = .024$ ). Neither the main effect for the total expense awareness ( $F(1, 310) = 1.87, p = .173, \eta_p^2 = .006$ ) nor its interaction with surcharge policy ( $F(1, 310) = 1.497, p = .222, \eta_p^2 = .005$ ) reached statistical significance. Therefore, the moderating role of the total

expense awareness on perceived expensiveness (H9) was not supported and I collapsed the data across the total expense awareness conditions in the mediation analyses.

**Table 2.2 Two-way ANCOVA of perceived expensiveness (initial model)**

Tests of Between-Subjects Effects						
Dependent Variable:PercExpensive						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	262.166 <sup>a</sup>	8	32.771	40.530	.000	.514
Intercept	.359	1	.359	.444	.505	.001
PercExpensiveA	208.225	1	208.225	257.529	.000	.457
QualityExpt	3.081	1	3.081	3.810	.052	.012
VTupscale	1.971	1	1.971	2.438	.119	.008
AGupscale	.192	1	.192	.237	.627	.001
GIupscale	.009	1	.009	.011	.918	.000
SurPolicy	7.142	1	7.142	8.834	.003	.028
TEalert	1.451	1	1.451	1.795	.181	.006
SurPolicy * TEalert	1.232	1	1.232	1.524	.218	.005
Error	247.417	306	.809			
Total	4488.250	315				
Corrected Total	509.583	314				

a. R Squared = .514 (Adjusted R Squared = .502)

## Use of Surcharge in Price Evaluation

*Evaluation Weight.* Recalled that participants were asked to split 10 chips between the two price components (the base price and the surcharge) to mirror the

weights they assigned to each price component in their price evaluation. A 2 (surcharge policy) x 2 (the total expense awareness) ANOVA on the number of chips participants assigned to surcharge (i.e., the amount of tip they voluntarily leave or the 15% mandatory service gratuity) revealed a main effect of surcharge policy only such that the number of chips participants allocated to the surcharge under 15% customary tipping ( $M = 2.42$ ) is lower than that under the 15% mandatory service gratuity ( $M = 3.59$ ;  $F(1, 311) = 26.20, p < .001, \eta_p^2 = .078$ ). Neither the main effects for the total expense awareness ( $F(1, 311) = .019, p = .891, \eta_p^2 < .001$ ) nor its interaction with surcharge policy ( $F(1, 311) = .021, p = .884, \eta_p^2 < .001$ ) was significant.

Because participants allocated fewer chips to the surcharge than the equal weight (i.e., 5 out of 10) across surcharge policy conditions ( $M = 2.42$  vs. 5,  $t(157) = -19.294, p < .001$  for 15% customary tipping;  $M = 3.59$  vs. 5,  $t(156) = -7.707, p < .001$  for a 15% mandatory service gratuity), I concluded that participants considered the surcharge less important than the brunch price in their price evaluation, regardless of whether the surcharge is voluntary or mandatory. However, the significant main effect of surcharge policy indicated that the 15% mandatory service gratuity was rated as more important in price evaluation than the corresponding 15% voluntary tipping. Consequently, participants should be less likely to ignore the former than the latter. Thus, I found indirect support for H1.

*Choice of Evaluation Base.* To further examine the differential processing effect of voluntary versus mandatory service gratuity, I asked participants to indicate which of the three mutually exclusive and exhaustive price component(s) (i.e., the

brunch price only, any applicable tips/surcharges only, or the total expense) they focused on when assessing the perceived expensiveness of the Sunday brunch at restaurant B. I first recoded participants' choice of evaluation base into a binary variable representing their use (or lack thereof) of the surcharge information. Thus, participants who focused on brunch price only and hence ignored the surcharge when they assessed the perceived expensiveness were assigned 0 whereas those who considered surcharge information in their price evaluation were assigned 1. I then regressed the use of surcharge on surcharge policy dummy, awareness of the total expense dummy and the interaction between them. Heteroscedasticity-consistent regression results indicated that the interaction between surcharge policy and awareness of the total expense dummies was not significant ( $B=0.158$ ,  $t(311) = 1.573$ ,  $p = .117$ ). I hence only ran tests on two-way contingency tables in subsequent analyses.

A 2 (surcharge policy) x 2 (use of surcharge information) chi-square analysis revealed a significant association between surcharge policy and participants' use of surcharge ( $\chi^2(1) = 9.194$ ,  $p < .01$ ). The Z test of equality for column proportions (please see table 2.3) pointed out that the proportion of participants who ignored the surcharge and used the base price only in price evaluation was significantly higher under 15% customary tipping (37.97%) than under the 15% mandatory gratuity (22.29%;  $p < .05$ ). Therefore, the data confirmed my hypothesis (H1) that consumers tended to disregard voluntary tips more often than the corresponding mandatory service gratuities in their price evaluation.

**Table 2.3 A two-way surcharge policy x use of surcharge contingency table**

		Surcharge Policy			
		15% Customary Tipping		15% Mandatory Service Gratuity	
		Count	Column N %	Count	Column N %
Use of Surcharge in Price Evaluation	Ignore	60	37.97% <sub>a</sub>	35	22.29% <sub>b</sub>
	Consider	98	62.03% <sub>a</sub>	122	77.71% <sub>b</sub>

Note: Proportions in the same row not sharing the same subscript are significantly different at  $p < 0.05$  in the two-sided test of equality for column proportions. Tests assume equal variances.

I also conducted a chi-square analysis on a 2 (the total expense awareness) x 2 (use of surcharge information) contingency table and found a significant association between total expense awareness and participants' use of surcharge ( $\chi^2(1) = 11.898, p < .01$ ). The Z test of equality for column proportions (please see table 2.4) indicated that the proportion of participants who ignored the surcharge and used the base price only in price evaluation was significantly higher when they were not asked to estimate the total expense before price evaluation (38.99%) than when they were asked to do so (21.15%;  $p < .05$ ). These data provided some evidence that the manipulation to guide customers' attention to surcharge information by asking them to determine the total expense before price evaluation was successful.

#### Perceived Surcharge Policy Fairness

A 2 (surcharge policy) x 2 (the total expense awareness) ANOVA on perceived surcharge policy fairness (Cronbach's  $\alpha = 0.90$ ) revealed a significant main effect of

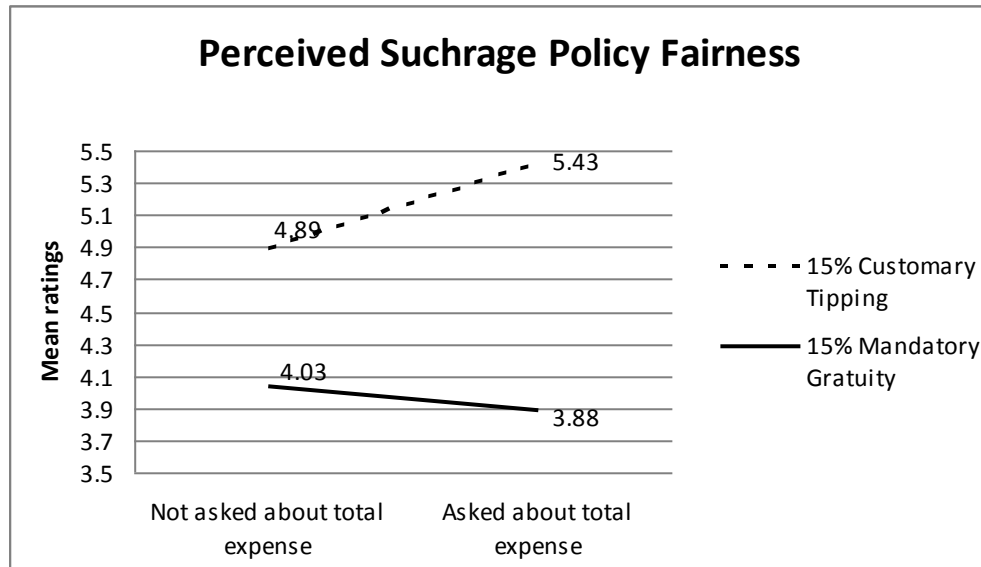


**Table 2.4 A two-way the total expense awareness x use of surcharge contingency table**

		The total Expense Awareness			
		Not Asked		Asked	
		Count	Column N %	Count	Column N %
Use of Surcharge in Price Evaluation	Ignore	62	38.99% <sub>a</sub>	33	21.15% <sub>b</sub>
	Consider	97	61.01% <sub>a</sub>	123	78.85% <sub>b</sub>

Note: Proportions in the same row not sharing the same subscript are significantly different at  $p < 0.05$  in the two-sided test of equality for column proportions. Tests assume equal variances.

surcharge policy ( $F(1, 311) = 64.438, p < .001, \eta_p^2 = .172$ ) qualified by a significant interaction between surcharge policy and the total expense awareness ( $F(1, 311) = 5.322, p = .022, \eta_p^2 = .017$ ). Simple effect comparisons indicated that when participants were not asked to estimate their total expense before assessing the expensiveness of the Sunday brunch, those exposed to 15% customary tipping ( $M = 4.89$ ) rated the surcharge policy as more fair than those exposed to a 15% mandatory service gratuity ( $M = 4.03; F(311) = 29.479, p < .01, \eta_p^2 = .05$ ). When participants were asked to estimate their total expense before assessing the expensiveness of the Sunday brunch, the difference in fairness perception between those exposed to 15% customary tipping ( $M = 5.43$ ) and those exposed to a 15% mandatory service gratuity ( $M = 3.88; F(311) = 94.386, p < .01, \eta_p^2 = .145$ ) became even more pronounced (please see figure 3.4). Overall, the findings support H2.

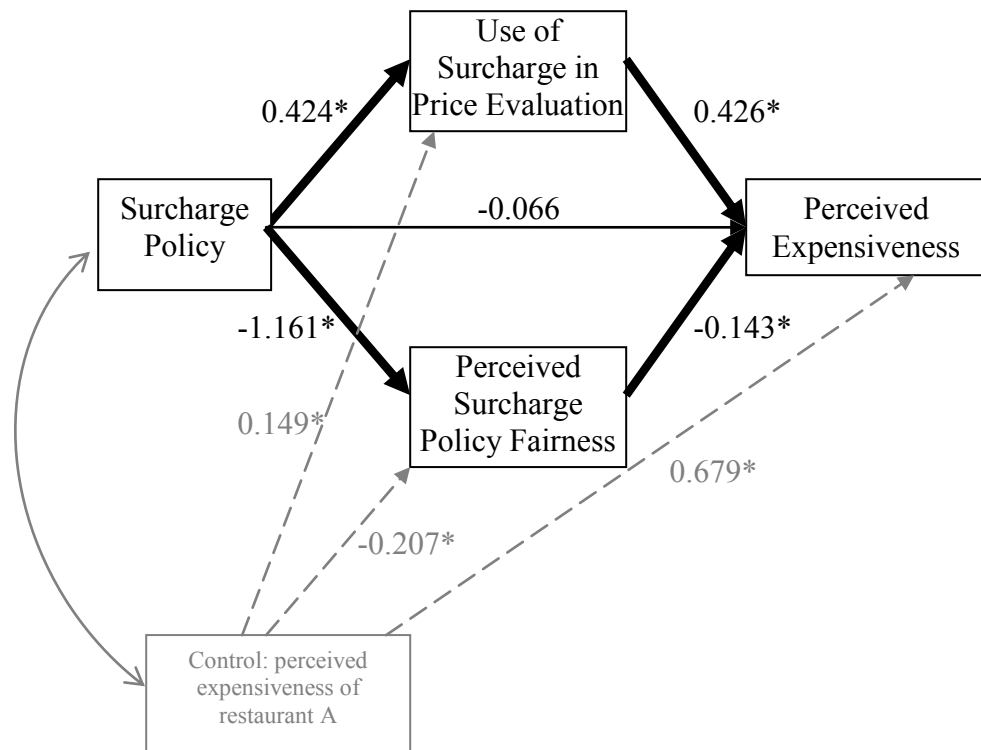


**Figure 2.4 Mean Ratings of Perceived Surcharge Policy Fairness**

### Mediation Analysis

*Perceived Expensiveness.* Advocated by some researchers (Zhao, Lynch, & Chen, 2010) as a modern and superior way than the traditional Baron-Kenny “three tests + Sobel” steps (Baron & Kenny, 1986) to conduct mediation analysis, nonparametric bootstrap tests of the indirect effects (Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007; Rucker, Preacher, Tormala, & Petty, 2011) were used to evaluate my proposed parallel mediation model for perceived menu price expensiveness (please see figure 2.5). In these analyses, mediation is significant if the 95% bias corrected and accelerated confidence intervals for the indirect effect do not include 0 (Preacher & Hayes, 2004; Preacher et al., 2007). Because the model contains a binary mediator (i.e., Use of Surcharge), which cannot be properly handled by Preacher and Hayes’s various SAS/SPSS macros for bootstrap test of mediation, I used Mplus instead to conduct the mediation analyses.

First, consistent with my previous findings using process measures, I found that, relative to participants in the 15% customary tipping condition, those exposed to a 15% mandatory service gratuity used the surcharge more often in their price evaluation (B = .424, se = .067,  $p = .0027$ ) and perceived the surcharge as less fair (B = -1.161, se = .0147,  $p < .001$ ). These data lend additional support for H1 and H2. The other two significant path coefficients in the model further indicated that participants' use of surcharge information in their price evaluation increased their perceived expensiveness (B = .426, se = .068,  $p < .001$ ) whereas their surcharge fairness perception negatively affected their price perception (B = -.143, se = .041,  $p < .001$ ). Hence, H3 and H4 were both supported.



Note: Path coefficients with an asterisk (\*) are significant ( $p \leq 0.05$ ). Bolded paths with 3.25 pt weight represent significant indirect effects ( $p \leq 0.01$ ).

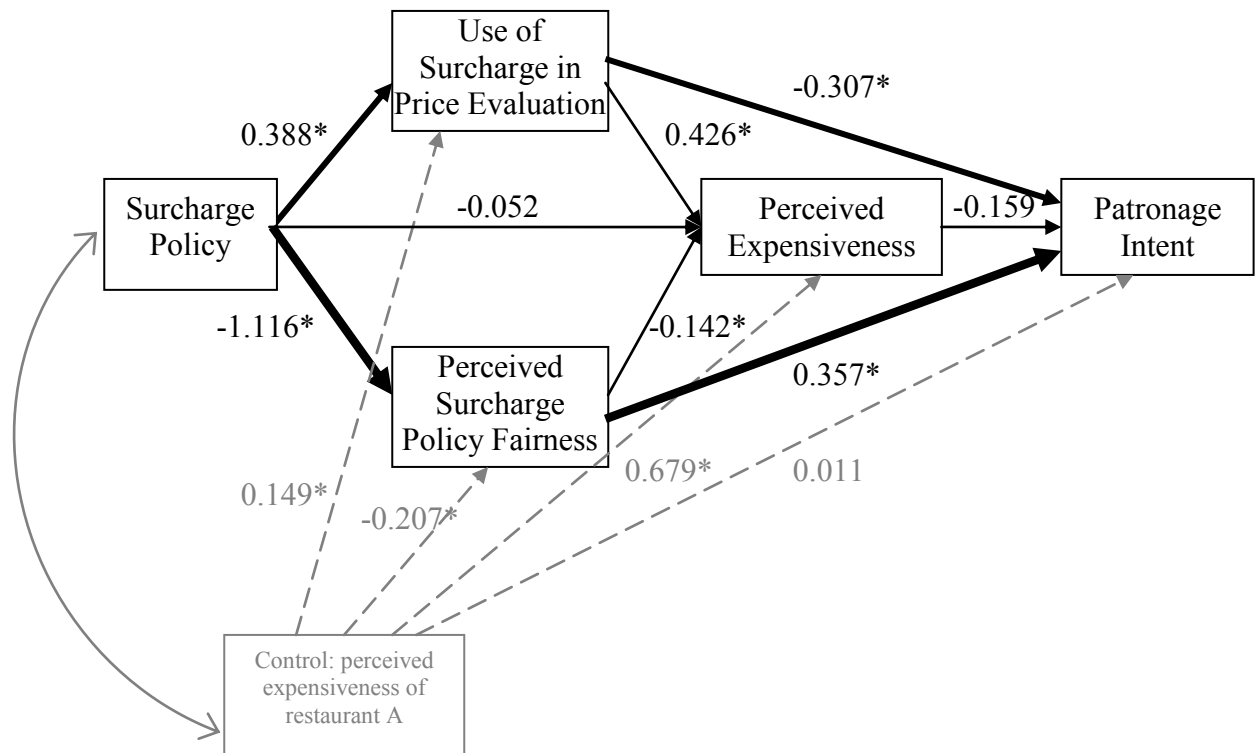
**Figure 2.5 Test results of the parallel mediation model of perceived expensiveness**

More important, results based on 5000 bootstrapped samples using bias-corrected and accelerated 95% confidence intervals showed that controlling for the effect of perceived expensiveness of restaurant A ( $B = .679$ ,  $se = .057$ ,  $p < .001$ ), surcharge policy had a non-significant residual direct effect ( $DE = -.066$ ,  $se = .114$ ,  $p = .566$ ) on perceived expensiveness of restaurant B. However, the indirect effects via participants' use of surcharge in price evaluation ( $IE = .181$ ,  $se = .07$ ,  $LL = .043$ ,  $UL = .318$ ) and their fairness perceptions on surcharge policy ( $IE = .166$ ,  $se = .051$ ,  $LL = .065$ ,  $UL = .267$ ) were both significant. Therefore, the two proposed mediators together fully mediated the relationship between surcharge policy and perceived expensiveness of restaurant B ( $TE = .281$ ,  $se = .100$ ,  $LL = .084$ ,  $UL = .478$ ).

To provide further evidence supporting my proposed parallel mediation model, I also compared the strengths of the two mediation effects (Lau & Cheung, 2010). Results obtained by Mplus indicated the difference in strengths between the two mediators was not significantly different from 0 ( $DM = M1 - M2 = -0.015$ ,  $se = .085$ ,  $LL = -0.181$ ,  $UL = .152$ ). Thus, I found strong support for H5.

*Patronage Intent.* The proposed mediation model of patronage intent was again tested using the bootstrap method with Mplus (please see figure 2.6). Hypotheses H1 to H4 were all supported by significant coefficients on the relevant paths (all  $ps < .02$ ). As stated in H6, participants' fairness perceptions on surcharge policy positively influenced their patronage intent ( $B = .357$ ,  $se = .056$ ,  $p < .001$ ). Contrary to H7, the path coefficient from perceived expensiveness to patronage intent was not significant, but in the expected direction ( $B = -.159$ ,  $se = .119$ ,  $p = .181$ ). Consequently, results based on 5000 bootstrapped samples using bias-corrected and accelerated 95%

confidence intervals showed that the only significant indirect effect in this model is that via perceived surcharge policy fairness (IE = -0.398, se = .076, LL = -0.547, UL = -0.250). None of the indirect effects via perceived expensiveness on patronage intent of restaurant B was significant (All  $p$ s > .24). Hence, H8 is only partially supported. Finally, though not hypothesized, the data also revealed a marginally significant indirect effect via the use of surcharge on patronage intent (IE = -0.119, se = .063,  $p$  = .059). However, the strength of the mediating effect of perceived surcharge fairness is significantly larger than that of use of surcharge (DM = M1-M2 = -0.279, se = .091, LL = -0.457, UL = -.101).



Note: Path coefficients with an asterisk (\*) are significant ( $p \leq 0.05$ ). Bolded paths with 3.25 pt weight represent a significant indirect effect ( $p \leq 0.01$ ) and those with 2.25 pt weight represent a marginally significant indirect effect ( $p \leq 0.10$ ).

**Figure 2.6 Test results of the mediation model of patronage intent**

## **Discussion**

In Study 2, I replicated the findings from Study 1 such that participants tended to perceive menu prices with 15% customary tipping as less expensive than those with a mandatory 15% service gratuity. More important, I explicitly examined the underlying mechanisms of these effects by including several process measures and testing my proposed parallel mediation model of perceived menu price expensiveness. I found strong support for all relevant hypotheses (H1-H5) and my mediation model indicated that two distinct psychological mechanisms operated concomitantly and in similar strengths to bring about the differential effects of surcharge policies on price perception. First, in the information processing route, participants in the 15% customary tipping condition are more likely to ignore the surcharge information and use the brunch price only than their counterparts in the 15% mandatory service gratuity condition when evaluating the perceived expensiveness of the Sunday brunch. Consequently, the negligence of additional charge for the Sunday brunch by those participants leads to lower perceived total cost and lower expensiveness ratings. Second, in the information evaluation route, participants in the 15% customary tipping condition tend to perceived the surcharge as more fair than those in the 15% mandatory service gratuity condition. The favorable surcharge fairness perception of those participants then translates into lower perceived expensiveness of the Sunday brunch.

Given that I did not find support for the moderating role of participants' awareness of the total expense for the relationship between surcharge policy and perceived expensiveness, I looked into the process measures for some insights. First,

while I found evidence that the manipulation was successful in prompting more participants across surcharge conditions to attend to and use surcharge information in their price evaluation, a follow-up analysis indicated that the majority of the increase (18 out of 26) in the number of participants who factored surcharges into their price perception when asked about the total expense came from the 15% mandatory service gratuity condition. As a result, the total expense recall manipulation actually increased rather than decreased the processing biases due to surcharge policy. Second, participants' fairness ratings on the surcharge indicated that the difference in fairness perceptions between surcharge policies was intensified when participants were asked to determine the total expense before price evaluation (please see figure 2.4). It is possible that the manipulation to channel participants' attention to the surcharge information made them more acute to the fairness of each surcharge policy. Thus, asking participants to estimate the total expenses not only increased processing bias between voluntary and mandatory service gratuities but also reinforced evaluation bias in fairness perceptions of the two surcharge policies. However, although the manipulation worked in the opposite direction as I expected, it seemed that it was not strong enough to produce a significant interaction between participants' awareness of the total expense and surcharge policy.

As for the model of patronage intent, I found significant support for the mediating effect via perceived surcharge policy fairness only. In addition, the data showed that the indirect effect via use of surcharge on patronage intent was marginally significant. Contrary to my hypotheses, participants' perceived expensiveness on the Sunday brunch did not influence their patronage intent of the restaurant. This non-

significant result may be a Type 2 error due to a lack of statistical power. Accordingly, I did not find any significant indirect effects via perceived expensiveness on demand.

### ***Study 3***

Recall that in my parallel mediation model, the disparities in perceived menu price expensiveness between participants exposed to voluntary tipping and those exposed to equivalent mandatory service gratuity are assumed to be caused by both differential processing effect and differential evaluation effect. Consequently, if a variable helps reduce or eliminate either effect, then it can potentially moderate the relationship between surcharge policy and perceptions of menu price expensiveness. In Study 2, I investigated total expense awareness, a potential moderator on the information processing route of my parallel mediation model. In the current study, I set out to examine local tipping norm, a potential moderator on the information evaluation route of my parallel mediation model.

In my earlier discussion on surcharge fairness, I argued that industry norm has a significant impact on perceived price fairness. When the surcharge policy employed by a restaurant is in contradiction with the industry norm, as in the case of a US restaurant charging a mandatory service gratuity in lieu of voluntary tipping, consumers will perceive the former policy as less fair than the latter policy. The differential surcharge fairness perceptions, in turn, may contribute to the differences in price perception. On the other hand, consumers' fairness perception on the 15% mandatory service gratuity relative to that of voluntary tipping should be improved if it is actually consistent with the industry norm. If this is the case, the differences in



perceived expensiveness between the two surcharge policies should become smaller. Study 3 was therefore designed to examine the possible moderating effect of local tipping norm on consumers' perceived menu price expensiveness. Specifically, I hypothesized that:

*H10: The local tipping norm moderates the relationship between surcharge policy and perceived price expensiveness.*

## **Method**

### **Participants**

Three hundred and twenty-five participants responded to a job listing (a.k.a. HIT) on MTurk website to take a short online survey about the effectiveness of restaurant advertising flyers. Twenty-one participants did not complete the survey and were excluded from the analyses. Out of the 304 participants included in the analyses, 60% were men and 77% were Caucasian. Their ages ranged from 18 to 79, with the average being 29.2. Slightly less than half of the participants (i.e., 44%) were college graduates. Twenty-seven percent of the participants reported a household income less than \$25,000 a year, 32% reported between \$25,001 and \$50,000, 30% reported between \$50,001 and \$100,000, and 12% reported more than \$100,000 a year. Their average dining out frequency at full-service restaurants was three times per month, with a low response of zero time per month and a high response of 20 times per month. Thus, this profile of participants is consistent with that of the two previous studies.

## Design and Procedure

Participants in Study 3 were first presented with a scenario in which they were on a week-long vacation, visiting a large capital city in Africa. Participants read that they have dined out at several downtown restaurants and learned that the exchange rate of US dollar for local currency is approximately 1:1. In addition, half of the participants were told that, in this foreign country, it is customary for restaurant patrons to leave 15% as tips whereas the other half of participants were told that it is customary for local restaurants to add a 15% mandatory service gratuity. Right after reading the scenario, participants were asked to answer three open-ended questions based on what they have learned from it. I used these questions to ensure that participants read through and understand the scenario correctly. Responses to these questions were not included in the analyses.

Next, participants started the flyer evaluation task for restaurant A and went on for restaurant B as in the previous studies. The stimuli for Study 3 are similar to those of Study 2 with several notable exceptions. First, for restaurant A, I used a service-inclusive price of \$10.85 per person (no tipping or service charges) for the Sunday brunch. Second, I measured participants' fairness perception on surcharge policy employed by restaurant B after explicitly telling participants restaurant B's surcharge policy.<sup>9</sup> Finally, I operationalized consumer demand as the choice intentions between going restaurant A and going restaurant B for the Sunday brunch by placing the two flyers side by side after participants finished evaluating individual flyers.

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<sup>9</sup> Consequently, for analyses related to participants' surcharge fairness perceptions, I only included those who successfully passed the manipulation check for restaurant surcharge policy.

## Results

### Manipulation Check

I conducted two manipulation checks to ensure that participants attended to both the surcharge policy used by restaurant B specifically as well as the tipping norm in the country described in the scenario. About 90% (274 out of 304) participants chose the correct surcharge policy for restaurant B, 79% (239 out of 304) participants identified the correct tipping norm for the country as whole, and 71% (217 out of 304) participants passed both manipulation checks. Although less than desired, I conclude that the manipulations were successful in producing the intended differences in perceived surcharge policies and local tipping norms.

### The Influence of Individual Tipping Propensity on Perceived Expensiveness

To check for the potential influence of individual tipping propensity on perceived expensiveness, I conducted similar analyses as in previous studies. First, I examined the relationship between participants' typical tip size and their perceived expensiveness of restaurant B and found a significant negative correlation ( $r = -.177$ ,  $n = 304$ ,  $p = .002$ ). Second, I regressed the expensiveness ratings of restaurant B on typical tip size, the 15% mandatory service gratuity policy dummy, the 15% mandatory service gratuity norm dummy as well as three covariates (i.e., the perceived expensiveness of restaurant A (Cronbach's  $\alpha = .99$ ), the association ratings of 15% mandatory service gratuity and upscale restaurants, and the expected quality of restaurant B). The interaction terms between typical tip size, surcharge policy and

local tipping norm dummies were then added to the model. The main effects model produced significant effects for the 15% mandatory service gratuity policy ( $B = .278$ ,  $t(297) = 2.977$ ,  $p = .003$ ) as well as three covariates (all  $ps < 0.03$ ). However, the coefficients for typical tip size ( $B = -.075$ ,  $t(297) = -1.585$ ,  $p = .114$ ) and the 15% mandatory service gratuity norm ( $B = .064$ ,  $t(297) = .681$ ,  $p = .497$ ) were not significant. Consequently, although I found a significant negative correlation between typical tip size and perceived expensiveness, results from the main effects model indicated that the influence of tipping propensity on price perception became inconsequential when perceived expensiveness of restaurant A, the association rating of 15% mandatory service gratuity and upscale restaurants as well as the expected quality of restaurant B were included as covariates. Moreover, all interaction terms from the full model, including the one between typical tip size and the 15% mandatory service gratuity policy dummy, did not reach statistical significance (all  $ps > .24$ ). Therefore, I excluded individual tipping propensity in subsequent analyses.

### The Moderating Role of Local Tipping Norm

The data were analyzed using a 2 (surcharge policy for restaurant B: 15% customary tipping vs. 15% mandatory service gratuity) x 2 (local tipping norms: 15% customary tipping vs. 15% mandatory service gratuity) ANCOVA with perceived expensiveness of restaurant A, the expected quality of restaurant B as well as the three surcharge policy-upscale restaurant association ratings as covariates. The initial analysis indicated that some of the covariates are not significant (please see table 2.5). I removed non-significant covariates sequentially, and the final ANCOVA model

included participants' perceived expensiveness ratings on restaurant A ( $F(1, 297) = 233.075, p < .001, \eta_p^2 = .44$ ), the association ratings of 15% mandatory service gratuity and upscale restaurants ( $F(1, 297) = 14.543, p < .001, \eta_p^2 = .047$ ), and the expected quality of restaurant B ( $F(1, 297) = 5.013, p = .026, \eta_p^2 = .017$ ) as significant covariates.

**Table 2.5 Two-way ANCOVA of perceived expensiveness (initial model)**

**Tests of Between-Subjects Effects**

Dependent Variable: PercExpensiveness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	194.818 <sup>a</sup>	8	24.352	36.738	.000	.499
Intercept	4.404	1	4.404	6.643	.010	.022
PercExpensivenessA	151.465	1	151.465	228.504	.000	.436
VTupscale	.512	1	.512	.772	.380	.003
AGupscale	4.733	1	4.733	7.140	.008	.024
Glupscale	1.113	1	1.113	1.679	.196	.006
QualityExp	3.616	1	3.616	5.455	.020	.018
Norm	.318	1	.318	.480	.489	.002
SurPolicy	5.571	1	5.571	8.405	.004	.028
Norm * SurPolicy	.693	1	.693	1.046	.307	.004
Error	195.543	295	.663			
Total	2831.750	304				
Corrected Total	390.361	303				

a. R Squared = .499 (Adjusted R Squared = .485)

In this model, I found only a significant main effect for restaurant surcharge policy such that participants perceived brunch price with 15% customary tipping ( $M =$

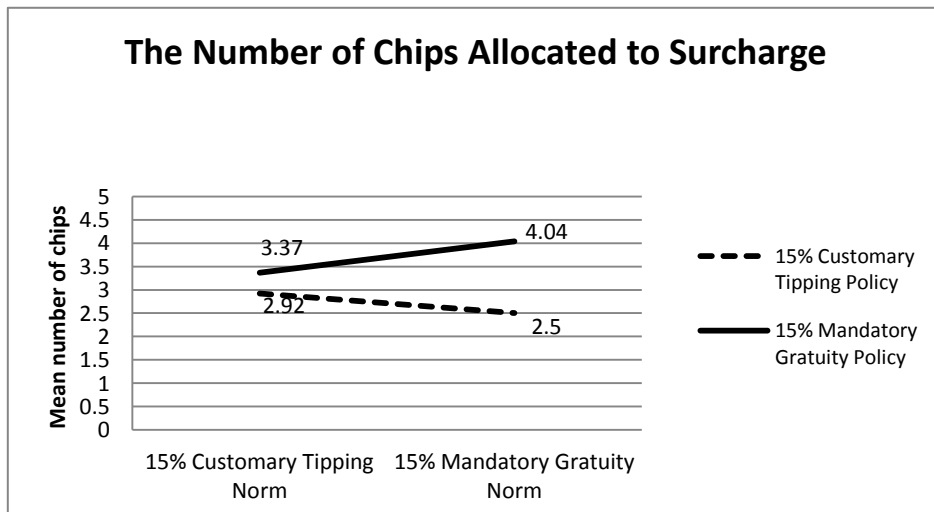
2.70) as less expensive than the same price with 15% mandatory service gratuities ( $M = 2.98$ ,  $F(1, 297) = 9.042$ ,  $p = .003$ ,  $\eta_p^2 = .03$ ). Neither the main effect of local tipping norm ( $F(1, 297) = .464$ ,  $p = .496$ ,  $\eta_p^2 = .002$ ) nor its interaction with restaurant surcharge policy ( $F(1, 297) = .907$ ,  $p = .342$ ,  $\eta_p^2 = .003$ ) was significant. Therefore, contrary to H10, different surcharge policies used by the restaurant seemed to influence participants' perceived menu price expensiveness in a similar way, regardless of whether it is consistent with the local tipping norm. I hence collapsed the data across the local tipping norm conditions in the mediation analyses.

#### Use of Surcharge in Price Evaluation

*Evaluation Weight.* A 2 (surcharge policy for restaurant B) x 2 (local tipping norms) ANOVA on the number of chips participants assigned to the surcharge revealed a significant main effect of surcharge policy ( $F(1, 300) = 17.592$ ,  $p < .001$ ,  $\eta_p^2 = .055$ ) qualified by a significant interaction between surcharge policy and local tipping norm ( $F(1, 300) = 5.312$ ,  $p = .022$ ,  $\eta_p^2 = .017$ ). Simple effect comparisons indicated that when the local tipping norm is 15% customary tipping, the difference in the number of chips participants allocated to the surcharge under 15% customary tipping ( $M = 2.92$ ) and that under the 15% mandatory service gratuity was not significant but in the expected direction ( $M = 3.37$ ;  $F(1, 300) = 1.773$ ,  $p = .184$ ,  $\eta_p^2 = .006$ ). In contrast, when the local tipping norm is 15% mandatory service gratuities, the difference in the number of chips allocated to the surcharge between those exposed to 15% customary tipping ( $M = 2.50$ ) and those exposed to a 15% mandatory service

gratuity ( $M = 4.04$ ;  $F(300) = 21.263$ ,  $p < .001$ ,  $\eta_p^2 = .066$ ) became significant at the conventional .05 two-tailed p-value (see Figure 3.7). Overall, the data suggested that the 15% mandatory service gratuity was considered as more important in price evaluation than the corresponding 15% voluntary tipping, regardless of the local tipping norms.

*Choice of Evaluation Base.* As in Study 2, I first recoded participants' choice of evaluation base into a binary variable representing their use or lack of use of the surcharge information. I then regressed the use of surcharge on surcharge policy, local tipping norm and the interaction between them. Heteroscedasticity-consistent regression results indicated that the interaction between surcharge policy and local tipping norm was not significant ( $B = .115$ ,  $t(300) = 1.046$ ,  $p = .297$ ). Therefore, I only ran tests on two-way contingency tables in subsequent analyses.



**Figure 2.7 Mean Number of Chips Allocated to Surcharge**

A 2 (surcharge policy) x 2 (use of surcharge) chi-square analysis revealed a significant association between surcharge policy and participants' use of surcharge ( $\chi^2(1) = 16.315, p < .01$ ). The Z test of equality for column proportions (see table 2.5) revealed that the proportion of participants who ignored the surcharge and used the base price only in price evaluation was significantly higher under 15% customary tipping (50.65%) than under the 15% mandatory gratuity (28%;  $p < .05$ ). Hence, the data confirmed my hypothesis (H1) that consumers tended to disregard voluntary tips more often than corresponding mandatory service gratuities in their price evaluation.

I also conducted a chi-square analysis on a 2 (local tipping norm) x 2 (use of surcharge) contingency table and found a non-significant association between local tipping norm and participants' use of surcharge ( $\chi^2(1) = 2.252, p = .133$ ). This suggested that our local tipping norm manipulation did not influence participants' use of surcharge information.

**Table 2.5 A two-way surcharge policy x use of surcharge contingency table**

		Surcharge Policy			
		15% Customary Tipping		15% Mandatory Service Gratuity	
		Count	Column N %	Count	Column N %
Use of Surcharge in Price Evaluation	Ignore	78	50.65% <sub>a</sub>	42	28% <sub>b</sub>
	Consider	76	49.35% <sub>a</sub>	108	72% <sub>b</sub>

Note: Proportions in the same row not sharing the same subscript are significantly different at  $p < 0.05$  in the two-sided test of equality for column proportions. Tests assume equal variances.



### Perceived Surcharge Policy Fairness

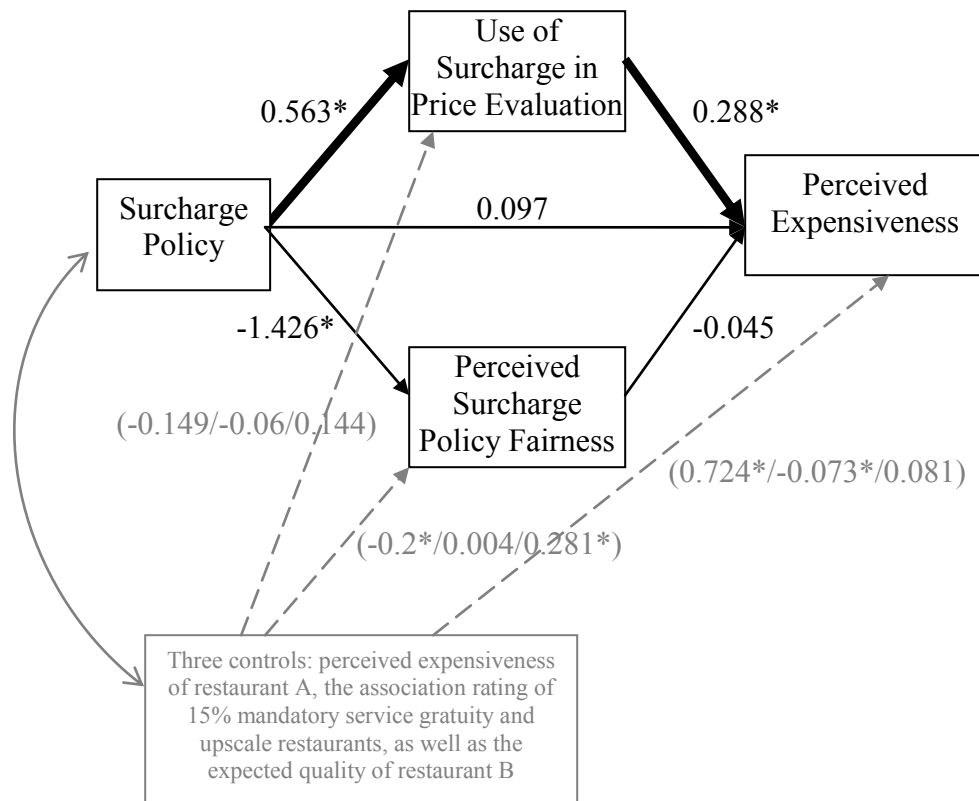
A 2 (surcharge policy for restaurant B) x 2 (local tipping norms) ANOVA on perceived surcharge policy fairness (Cronbach's  $\alpha = 0.96$ ) for participants who passed the surcharge policy manipulation check revealed a significant main effect of surcharge policy only such that participants perceived the 15% surcharge at restaurant B as more fair under customary tipping ( $M = 6.08$ ) than under mandatory service gratuities ( $M = 4.65$ ,  $F(1, 270) = 80.247$ ,  $p < .001$ ,  $\eta_p^2 = .229$ ). Neither the main effect for local tipping norm ( $F(1, 270) = .527$ ,  $p = .468$ ,  $\eta_p^2 = .002$ ) nor its interaction with surcharge policy ( $F(1, 270) = 1.024$ ,  $p = .313$ ,  $\eta_p^2 = .004$ ) reached statistical significance. These data provided support for H2. However, the non-significant interaction term suggested that the local tipping norm manipulation to reduce differences in participants' fairness perceptions on 15% customary tipping versus a 15% mandatory service gratuity was unsuccessful because participants had similar fairness perceptions on the two surcharge policies regardless of the local tipping norms. This finding may help explain the non-significant moderating effect of local tipping norms on the relationship between surcharge policy and price perception.

### Mediation Analysis

*Perceived Expensiveness.* As in Study 2, I evaluated that parallel mediation model of price perception using nonparametric bootstrap tests of the indirect effects (please see figure 2.8). First, in line with my preceding analyses, the significant path coefficients indicated that participant in the 15% mandatory service gratuity condition

considered the surcharge more often ( $B = .563$ ,  $se = .163$ ,  $p < .001$ ) but perceived the surcharge as less fair ( $B = -1.426$ ,  $se = .0152$ ,  $p < .001$ ) in their price evaluation than those in the 15% customary tipping condition. In addition, I found that participants' use of surcharge led to higher perceived expensiveness of restaurant B ( $B = .288$ ,  $se = .067$ ,  $p < .001$ ). Hence, H1 to H3 are all supported. However, contrary to H4, participants' surcharge fairness perception had no impact on their price perception ( $B = -.045$ ,  $se = .04$ ,  $p = .26$ ) in the data.

Results based on 5000 bootstrapped samples using bias-corrected and accelerated 95% confidence intervals showed that controlling for the effect of perceived expensiveness of restaurant A ( $B = .724$ ,  $se = .051$ ,  $p < .001$ ), the association ratings of 15% mandatory service gratuity and upscale restaurants ( $B = -0.073$ ,  $se = .031$ ,  $p = .019$ ), as well as the expected quality of restaurant B ( $B = .081$ ,  $se = .051$ ,  $p = .117$ ), surcharge policy had a non-significant residual direct effect ( $DE = 0.097$ ,  $se = .117$ ,  $p = .409$ ) on perceived expensiveness of restaurant B. The indirect effects via participants' use of surcharge on perceived expensiveness ( $IE = .162$ ,  $se = .063$ ,  $LL = .039$ ,  $UL = .285$ ) was significant. However, participants' fairness perceptions on surcharge policy no longer mediated their price perceptions ( $IE = .064$ ,  $se = .058$ ,  $LL = -0.05$ ,  $UL = .178$ ,  $p = 0.273$ ). Consequently, participants' use of surcharge fully mediated the relationship between surcharge policy and perceived expensiveness of restaurant B ( $TE = .323$ ,  $se = .093$ ,  $LL = .141$ ,  $UL = .504$ ). I only found partial support for the parallel mediation model of price perception with this data (H5).

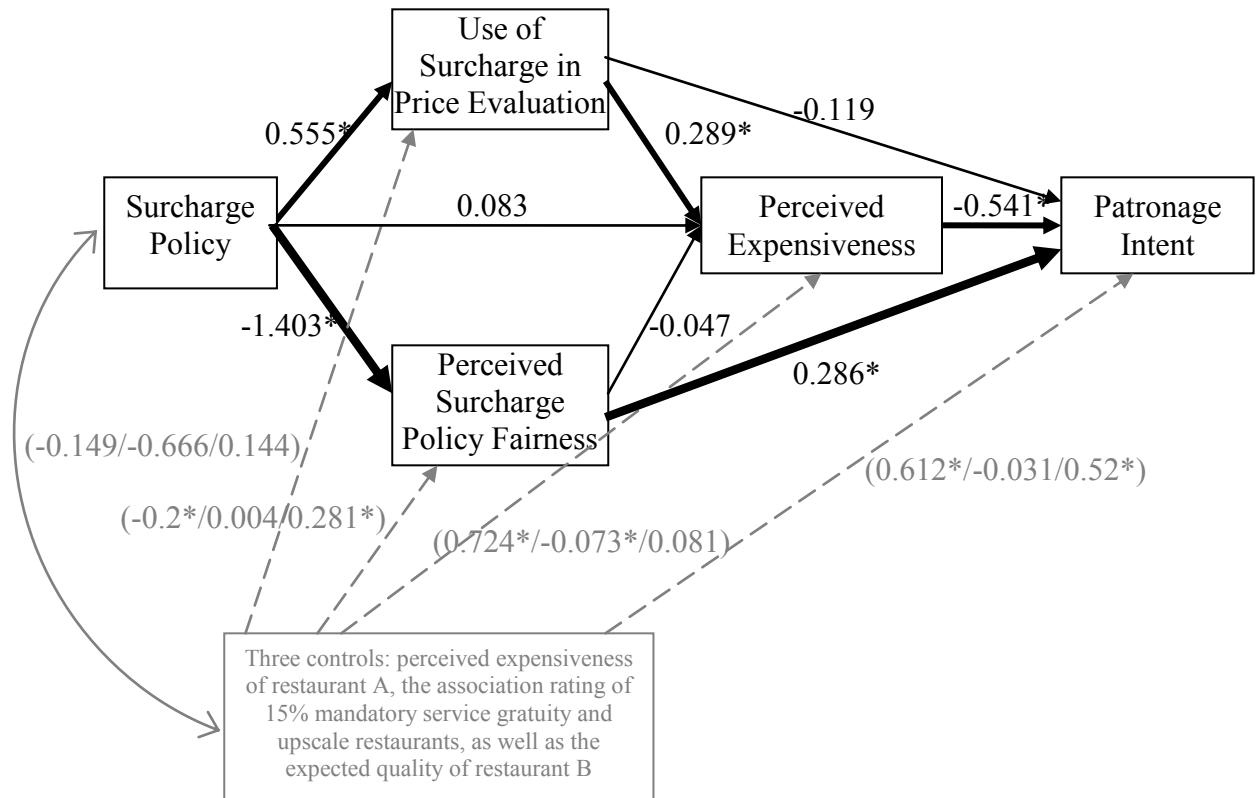


Note: Path coefficients with an asterisk (\*) are significant ( $p \leq 0.05$ ). Bolded paths with 3.25 pt weight represent a significant indirect effect ( $p \leq 0.01$ ).

**Figure 2.8 Test results of the parallel mediation model of perceived expensiveness**

*Patronage Intent.* The bootstrap method was again used to test the proposed mediation model of patronage intent (please see figure 2.9). As in the mediation model of price perception, path coefficients corresponding to H1 to H3 were all significant (all  $ps < .001$ ) but the one corresponding to H4 again turned out to be non-significant ( $B = -.047$ ,  $se = .039$ ,  $p = .237$ ). Moreover, I found that participants' fairness perceptions on surcharge policy positively influenced their patronage intent ( $B = .286$ ,  $se = .077$ ,  $p < .001$ ) whereas their perceived expensiveness negatively influenced their

patronage intent ( $B = -.541$ ,  $se = .188$ ,  $p = .004$ ). Hence, both H6 and H7 were supported.



Note: Path coefficients with an asterisk (\*) are significant ( $p \leq 0.05$ ). Bolded paths with 3.25 pt weight represent a significant indirect effect ( $p \leq 0.01$ ) and those with 2.25 pt weight represent a marginally significant indirect effect ( $p \leq 0.10$ ).

**Figure 2.9 Test results of the mediation model of patronage intent**

Results based on 5000 bootstrapped samples using bias-corrected and accelerated 95% confidence intervals revealed a significant indirect effect of perceived surcharge policy fairness ( $IE = -0.402$ ,  $se = .117$ ,  $LL = -0.63$ ,  $UL = -0.173$ ). Furthermore, the indirect effect of surcharge policy via the use of surcharge and

perceived expensiveness on patronage intent achieved marginal significance ( $IE = -0.087$ ,  $se = .048$ ,  $p = 0.068$ ). Hence, I found some support for H8. However, the strength of the mediating effect of perceived surcharge fairness is significantly larger than that of perceived menu price expensiveness ( $DM = M1-M2 = -0.315$ ,  $se = .131$ ,  $LL = -0.572$ ,  $UL = -.057$ ).

## **Discussion**

In Study 3, I again obtained strong evidence for the differential effects of surcharge policy on price perception such that participants are inclined to perceive a menu price with 15% customary tipping as less expensive than the same price with a 15% mandatory service gratuity. In addition, I found support for hypotheses H1-H3 with the process measures. However, inconsistent with H4, the data indicated that participants' surcharge fairness perception did not influence their perceived menu price expensiveness. As a result, the indirect effect of perceived surcharge fairness turned out to be non-significant and participants' use of surcharge information alone fully mediated the relationship between surcharge policy and perceived menu price expensiveness. Thus, my proposed parallel mediation model of price perception (H5) was only partially supported.

Furthermore, contrary to H10, I found that the local tipping norms did not moderate the relationship between surcharge policy and the perceived menu price expensiveness, which may be caused by the failure of local tipping norm manipulation to reduce the differences in participants' fairness perception between surcharge policies as I pointed out earlier. It is possible that the tipping norm of participants'

own culture is so deeply ingrained in their mind that it overrode any effect of the local tipping norm.

However, although the 15% mandatory service gratuity tipping norm fell short on enhancing participants' fairness perceptions on the corresponding surcharge policy used by the restaurant, it seemed to help assuage their "pain of paying" and made the disparities in expensiveness perceptions between surcharge policies negligible. Consequently, the local tipping norm manipulation may be responsible for the null effect of surcharge fairness perceptions on perceived menu price expensiveness (H4) and the partial breakdown of my proposed parallel mediation model of price perception in this study.

As in Study 2, I once more found strong evidence of the positive impact of surcharge fairness perception on patronage intent (H6) as well as the mediating role of perceived surcharge fairness on the relationship between surcharge policy and patronage intent. In addition, the data showed that favorable price perception led to higher patronage intent (H7) and that the indirect effect of surcharge policy via the perceived expensiveness on patronage intent was marginally significant. Thus, I found some evidence for H9. However, the mediating strength of surcharge fairness perception is significantly stronger than that of perceived expensiveness.

### ***General Discussion***

Although behavioral scientists have conducted an extensive body of research on price partitioning, the framing effect of surcharge has received little attention. Several researchers touched upon this topic and examined the impact of expressing the

surcharge either in dollar terms or as a percentage of the base price on price perception. Their findings suggested that percentage surcharge often gives rise to a lower total price perception than comparable dollar surcharge because consumers are more likely to disregard or discount the former than the latter (Kim, 2006; Morwitz et al., 1998; Xia & Monroe, 2004).

The current paper extended framing research on surcharge by studying whether presenting the same service gratuity either as a customary tip or as a mandatory fee induces different consumer reactions. In the context of Sunday brunch evaluation, I showed that participants perceived a menu price with 15% customary tipping as less expensive than the same price with a 15% mandatory service gratuity (Studies 1, 2 and 3). In addition, they expressed greater intent to patronize a restaurant when it is under voluntary tipping than when it is under a corresponding mandatory service gratuity (Studies 2 and 3).

More importantly, in addition to demonstrating the differential effects of voluntary versus mandatory service gratuity on price perception and demand, I thoroughly explored various psychological mechanisms underlying these effects (Studies 2 and 3). Together, the studies provide converging evidence that participants' use of surcharge information and perceived surcharge fairness acted in parallel and with similar strengths as mediators of the relationship between surcharge policy and menu price perception. I bolstered support for my proposed model by ruling out consumers' association of mandatory service gratuity with upscale restaurants and individual tipping propensity as potential explanations. Furthermore, I found some evidence that participants' patronage intent was mediated by both surcharge fairness

perception and price expensiveness perception, although the impact of the former mediator is significantly larger than the latter.

While extant literature has provided several different psychological accounts on how consumers respond to partitioned prices, to the best of my knowledge, the current research is the first empirical investigation that incorporates multiple mechanisms underlying the price partitioning effect simultaneously. The establishment of a dual-process model of partitioned price perception in the paper has two important theoretical implications. First, it suggests that some of the null or inverse effects of price partitioning in previous studies may be manifestations of multiple competing psychological processes. Thus, a good way to reconcile these conflicts is to identify the contending mechanisms in those studies. Second, it calls attention to the need to use a more integrative approach when predicting the downstream effects of price partitioning. As shown in this paper, price partitioning may foster multiple processes in tandem. Consequently, it may not be appropriate for researchers to single out only one of them and examine it in isolation.

### **Managerial Implications**

The findings of the present research also have important implications for the food service industry as a growing number of restaurants have adopted mandatory service gratuity in place of voluntary tipping for part or all of their services in recent years. Although the decision to switch to mandatory service gratuity is mostly driven by concerns about internal customers such as employee compensation, this research suggests that it may have a negative impact on external customers in terms of menu



price perception and patronage intent. Consequently, restaurants, especially those targeting price-sensitive clientele, should think twice before jumping on the mandatory gratuity bandwagon.

Additionally, results of my parallel mediation model of menu price perception indicate that there may be two different ways for restaurants imposing mandatory service gratuity to try to alleviate the adverse influence of the surcharge policy on perception of menu price expensiveness. First, restaurants may seek to minimize chances of customers factoring the mandatory service gratuity into menu price perception. The most common practice to achieve this goal is to make the surcharge less salient so that customers are likely to overlook it. However, a previous study by Lee & Han (2002) suggested that when consumers hold the restaurant responsible for their failure to attend to the surcharge, their brand attitude will decrease. Furthermore, anecdotal evidence indicates that some customers may be outraged once they realize that restaurants oblige them to tip at a certain level without giving proper notice or warning, which may be more damaging than perceptions of high menu prices. As a result, reducing customers' tendency to consider the mandatory service gratuity in price evaluation by making it unobtrusive may do more harm than good.

Another way to decrease consumers' perceived expensiveness on menu prices with a mandatory service gratuity is through improving their surcharge fairness perception. In my previous discussion, I have argued that when restaurants enforce service gratuities at a predetermined level, consumers perceive the surcharges as less fair because they entirely lose control over how much to tip. It follows that if restaurants can share the discretionary power to set the level of mandatory service

gratuity with the customers, it may help restore customers' sense of control and hence improve their surcharge fairness perceptions. For example, rather than leave customers out of the entire price-setting process, restaurants exposing mandatory service gratuities could list several suggested gratuity levels and let customers choose among them. Being able to have the final say on how much they pay for the restaurant service should augment customers' perceived surcharge fairness, which in turn has a positive impact on their menu price perception.

However, the most valuable benefit that comes with an enhanced fairness perception on the surcharge seems to be increased demand. The model showed that consumers' perceived surcharge fairness influences their patronage intent directly rather than through price perception. In addition, the impact of perceived menu price expensiveness on patronage intent is only marginal when controlling for the direct effect of perceived surcharge fairness. That is to say, the perception of high menu price induced by a mandatory service gratuity may have limited impact on patronage intent as long as consumers perceive the surcharge by itself as relatively fair. As a whole, this research suggests that if a restaurant wants to switch from voluntary tipping to mandatory service gratuity, then the key to minimize any adverse effect with this move is to promote a positive fairness perception on the surcharge among its customers.

### **Study Limitations and Directions for Future Research**

The current paper has several limitations that could be addressed in future research. First, in order to control for individual differences in tipping propensity, I used an explicit 15% customary tipping policy in place of the standard and often

unstated voluntary tipping. This design potentially eliminated the differences in visual salience between voluntary and mandatory service gratuity so that the results may be more conservative. Second, I only examined the 15% level of mandatory service gratuity, which corresponds to the lower boundary of the typical tipping range. Future research may wish to investigate mandatory service gratuity at other commonly used levels. Another limitation related to the design of the stimuli is the use of an advertising flyer featuring a *prix fixe* menu price. It may be meaningful to replicate the studies with the more commonly encountered *a la carte* menus to increase the generalizability and relevance of the study findings.

Future research endeavor may also aim to discover significant moderators of the link between surcharge policy and perceptions of menu price expensiveness. For example, the findings implied that the tipping norm of one's own culture, rather than that of the local culture, may be a potential moderator for price perceptions among people exposed to different surcharge policies. Consequently, a cross-cultural study involving people with different mindsets about service gratuity (e.g., voluntary tipping for Americans and mandatory service gratuity for Australians) should extend the current research. In addition, contextual factors such as the brand image or firm's reputation and individual difference variables such as need for cognition may also be worthy of examination.

Finally, since I studied the differential effects of voluntary versus mandatory service gratuity on price perception and demand in the context of Sunday brunch flyer evaluation, the findings stand for an *a priori* assessment rather than a post hoc evaluation of a consumption experience. In this regard, a fruitful research avenue

would be conducting a simulation study or a field study that captures consumers' full dining experience and examine the impact of surcharge policy on post-consumption satisfaction and repurchase intentions.

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## APPENDIX A: STUDY 1

### OVERVIEW

You are invited to participate in a research study about the effectiveness of restaurant advertising flyers. You must be 18 years old to participate.

There are no known discomforts or risks associated with participation in this study.

Your participation is voluntary and you are free to withdraw at any time. Your responses to the questions will be anonymous. The study will take less than 10 minutes to complete.

### INSTRUCTIONS

Suppose that you want to have a brunch in the coming Sunday. There are two local restaurants famous for their Sunday Brunches. You have not been to either restaurant before but have heard that the quality of food and service of both restaurants is pretty good. In the following screens, you will see Sunday Brunch flyers for each restaurant with food and price information sequentially. After reading each flyer, you will be asked to answer several questions about this restaurant. There is also a general background survey in the end of the questionnaire.

Thank you for participating in this study.

**Restaurant A**



The Sunday Brunch at restaurant A is:  
(1 = Extremely inexpensive, 7 = Extremely expensive)  
1      2      3      4      5      6      7

The price of the Sunday Brunch at restaurant A is:  
(1 = Extremely unattractive, 7 = Extremely attractive)  
1      2      3      4      5      6      7

The Sunday Brunch at restaurant A is:  
(1 = Extremely low-priced, 7 = Extremely high-priced)  
1      2      3      4      5      6      7

How likely would you go to restaurant A for Sunday Brunch?  
(1 = Very unlikely, 7 = Very likely)  
1      2      3      4      5      6      7

I expect that the quality of food and service for the Sunday Brunch at restaurant A is:  
(1 = Very poor, 7 = Very high)  
1      2      3      4      5      6      7

I think the flyer for Sunday Brunch at restaurant A is:  
(1 = Very unattractive, 7 = Very attractive)  
1      2      3      4      5      6      7

Please briefly list all the factors you considered when evaluating the expensiveness of

the Sunday Brunch at restaurant A:

Restaurant B (voluntary gratuity)



The Sunday Brunch at restaurant B is:

(1 = Extremely inexpensive, 7 = Extremely expensive)

1      2      3      4      5      6      7

The price of the Sunday Brunch at restaurant B is:

(1 = Extremely unattractive, 7 = Extremely attractive)

1      2      3      4      5      6      7

The Sunday Brunch at restaurant B is:

(1 = Extremely low-priced, 7 = Extremely high-priced)

1      2      3      4      5      6      7

How likely would you go to restaurant B for Sunday Brunch?

(1 = Very unlikely, 7 = Very likely)

1      2      3      4      5      6      7

I expect that the quality of food and service for the Sunday Brunch at restaurant B is:

(1 = Very poor, 7 = Very high)

1      2      3      4      5      6      7

I think the flyer for Sunday Brunch at restaurant B is:

(1 = Very unattractive, 7 = Very attractive)

1      2      3      4      5      6      7

Please briefly list all the factors you considered when evaluating the expensiveness of the Sunday Brunch at restaurant B:

Which of the following pricing policies do you believe is used at restaurant B?

- ☐ Voluntary tips
- ☐ 15% automatic gratuity
- ☐ Gratuity-inclusive price (no tipping allowed)

How much would you tip in dollars and cents for the \$8.95 Sunday Brunch at restaurant B?

Please answer the following questions based on your personal experience:

-In general, what percent would you tip for satisfactory food and service at full-service restaurant?

-If you dine out at a full-service restaurant where tipping is not allowed but instead built into the menu price, what percent would you expect to represent the hidden gratuities?

How would you evaluate the fairness of the following pricing policies at full-service restaurants?

(1 = Extremely unfair, 7 = Extremely fair)

-Voluntary tipping:

1      2      3      4      5      6      7

-Automatic 15% service gratuity on all checks:

1      2      3      4      5      6      7

-No tipping allowed (building service surcharge into the menu prices):

1      2      3      4      5      6      7

How acceptable are the following pricing policies to you when you dine out at a full-service restaurant?

(1 = Extremely unacceptable, 7 = Extremely acceptable)

-Voluntary tipping:

1      2      3      4      5      6      7

-Automatic 15% service gratuity on all checks:

1      2      3      4      5      6      7

-No tipping allowed (building service surcharge into the menu prices):

1      2      3      4      5      6      7

Please indicate your level of agreement with the following statements:

(1 = Very much disagree, 7 = Very much agree)

-The practice of voluntary tipping is more common among upscale restaurants than among less expensive ones.

1      2      3      4      5      6      7

- The practice of adding automatic gratuities to bills is more common among upscale

restaurants than among less expensive ones.

1      2      3      4      5      6      7

- The practice of including the cost of service in menu prices is more common among upscale restaurants than among less expensive ones.

1      2      3      4      5      6      7

Please evaluate the following statements:

(1 = Very much disagree, 7 = Very much agree)

-In general, a restaurant tip should be earned, not automatic.

1      2      3      4      5      6      7

- I do not like being forced to pay tips at restaurants.

1      2      3      4      5      6      7

- Restaurant customers should decide whether to tip and how much to tip.

1      2      3      4      5      6      7

Please tell us about yourself.

How old are you?

What is your gender?

☐ Male

☐ Female

What is your race?

☐ White/Caucasian

☐ African American

☐ Hispanic

☐ Asian

☐ Mixed/Others

Are you a US citizen or permanent residents?

☐ Yes

☐ No

What is the highest level of education you have completed?

- ☐ Less than High School
- ☐ High School Graduate
- ☐ Some College
- ☐ College Graduate
- ☐ Post-graduate

What is your combined annual household income?

- ☐ Less than 25,000
- ☐ 25,001 – 50,000
- ☐ 50,001 – 100,000
- ☐ 100,001 or more

Please indicate your familiarity with US restaurant tipping customs:

(1 = Very unfamiliar, 7 = Very familiar)

1      2      3      4      5      6      7

On average, how many times per month do you dine out at full-service restaurants?

Restaurant B (built-in gratuity)

<p><b>Sunday Brunch</b></p> <p>10:00am until 2:00pm</p> <p>French Toast Eggs Benedict Bacon &amp; Sausage Biscuits &amp; Gravy Homemade Pancakes And Much, Much More</p> <p><b>\$10.25 per person inclusive of gratuity (no tipping allowed)</b></p> <p>504 E. 41ST STREET ITHACA NEW YORK 14850 RESERVATIONS 607 216 8848</p>
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Restaurant B (mandatory gratuity)

<p><b>Sunday Brunch</b></p> <p>10:00am until 2:00pm</p> <p>French Toast Eggs Benedict Bacon &amp; Sausage Biscuits &amp; Gravy Homemade Pancakes And Much, Much More</p> <p><b>\$8.95 per person plus 15% automatic service gratuity</b></p> <p>504 E. 41ST STREET ITHACA NEW YORK 14850 RESERVATIONS 607 216 8848</p>
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## APPENDIX B: STUDY 2

### OVERVIEW

You are invited to participate in a research study about the effectiveness of restaurant advertising flyers. You must be 18 years old to participate. There are no known discomforts or risks associated with participation in this study. Your participation is voluntary and you are free to withdraw at any time. Your responses to the questions will be anonymous. The study will take less than 10 minutes to complete.

### INSTRUCTIONS

Imagine that you want to have a brunch in the coming Sunday. There are two local restaurants famous for their Sunday Brunches. You have not been to either restaurant before but have heard that the quality of food and service of both restaurants is pretty good. In the following screens, you will see Sunday Brunch flyers for each restaurant with food and price information sequentially. After reading each flyer, you will be asked to answer several questions about this restaurant. There is also a general background survey in the end of the questionnaire.

Thank you for participating in this study.

Restaurant A



The Sunday Brunch at restaurant A is:

(1 = Extremely inexpensive, 7 = Extremely expensive)

1      2      3      4      5      6      7

The Sunday Brunch at restaurant A is:

(1 = Extremely low-priced, 7 = Extremely high-priced)

1      2      3      4      5      6      7

How likely would you go to restaurant A for Sunday Brunch?

(1 = Very unlikely, 7 = Very likely)

1      2      3      4      5      6      7

I expect that the quality of food and service for the Sunday Brunch at restaurant A is:

(1 = Very poor, 7 = Very high)

1      2      3      4      5      6      7

I think the flyer for Sunday Brunch at restaurant A is:

(1 = Very unattractive, 7 = Very attractive)

1      2      3      4      5      6      7



Restaurant B (voluntary gratuity)

<p><i>All-You-Can-Eat</i></p> <p><b>Sunday Brunch</b></p> <p><b>10:00 AM until 2:00 PM</b></p> <p><i>French Toast</i> <i>Eggs Benedict</i> <i>Bacon &amp; Sausage</i> <i>Homemade Pancakes</i> <i>Fresh Fruit</i> <i>Coffee, Tea &amp; Orange Juice</i> <i>And Other Traditional Breakfast Favorites</i></p> <div><p><b>\$8.95 per person</b></p><p>Tipping is voluntary It is customary for customers to leave 15% as tips</p></div> <p>RESERVATIONS 1975 8848</p>
---

[If you went to restaurant B's Sunday Brunch by yourself, how much would you end up spending in total (including any applicable tips or gratuities)?]

The Sunday Brunch at restaurant B is:

(1 = Extremely inexpensive, 7 = Extremely expensive)

1      2      3      4      5      6      7

The Sunday Brunch at restaurant B is:

(1 = Extremely low-priced, 7 = Extremely high-priced)

1      2      3      4      5      6      7

How likely would you go to restaurant B for Sunday Brunch?

(1 = Very unlikely, 7 = Very likely)

1      2      3      4      5      6      7

Please choose one of the following three statements:

When evaluating the expensiveness of the Sunday Brunch at restaurant B (the first two questions on this page):

- ☐ I focused on the \$8.95 brunch price ONLY.
- ☐ I focused on any applicable tips/surcharges ONLY.
- ☐ I focused on the total expense (i.e., the \$8.95 brunch price PLUS any applicable tips/surcharges).

Weight the importance of each individual price component in your expensiveness

evaluation of restaurant B (the first two questions on this page) by allocating 10 chips between them:

- \_\_\_\_\_ 1) The \$8.95 brunch price  
\_\_\_\_\_ 2) The amount of tip I will voluntarily leave

I expect that the quality of food and service for the Sunday Brunch at restaurant B is:  
(1 = Very poor, 7 = Very high)

1      2      3      4      5      6      7

I think the flyer for Sunday Brunch at restaurant B is:  
(1 = Very unattractive, 7 = Very attractive)

1      2      3      4      5      6      7

Which of the following statements best describes the pricing policy used at restaurant B for the Sunday Brunch?

- ☐ Tipping is voluntary. Restaurant patrons can leave any amount they deem appropriate. They usually leave a 15% tip.
- ☐ Restaurant patrons are required to pay 15% service gratuities on top of the \$8.95 brunch price.

Please use the scales below to express your reactions to the pricing policy at restaurant B for the Sunday Brunch.

-The pricing policy used at restaurant B for the Sunday Brunch is:  
(1 = Very unfair, 7 = Very fair)

1      2      3      4      5      6      7

-The pricing policy used at restaurant B for the Sunday Brunch is:  
(1 = Very unreasonable, 7 = Very reasonable)

1      2      3      4      5      6      7

-The pricing policy used at restaurant B for the Sunday Brunch is:  
(1 = Very unjustified, 7 = Very justified)

1      2      3      4      5      6      7

Please answer the following questions based on your personal experience:

If you dine out at a full-service restaurant where tipping is voluntary, what percent would you tip for satisfactory food and service at full-service restaurant?

Please indicate your level of agreement with the following statements:  
(1 = Very much disagree, 7 = Very much agree)

-The practice of voluntary tipping is more common among upscale restaurants than among less expensive ones.

1      2      3      4      5      6      7

-The practice of adding automatic gratuities to bills is more common among upscale

restaurants than among less expensive ones.

1      2      3      4      5      6      7

-The practice of including the cost of service in menu prices is more common among upscale restaurants than among less expensive ones.

1      2      3      4      5      6      7

Please evaluate the following statements:

(1 = Very much disagree, 7 = Very much agree)

-In general, a restaurant tip should be earned, not automatic.

1      2      3      4      5      6      7

-I do not like being forced to pay tips at restaurants.

1      2      3      4      5      6      7

-Restaurant customers should decide whether to tip and how much to tip.

1      2      3      4      5      6      7

Please tell us about yourself.

How old are you?

What is your gender?

- ☐ Male
- ☐ Female

What is your race?

- ☐ White/Caucasian
- ☐ African American
- ☐ Hispanic
- ☐ Asian
- ☐ Mixed/Others

Are you a US citizen or permanent residents?

- ☐ Yes
- ☐ No

What is the highest level of education you have completed?

- ☐ Less than High School
- ☐ High School Graduate
- ☐ Some College
- ☐ College Graduate
- ☐ Post-graduate

What is your combined annual household income?

- ☐ Less than 25,000
- ☐ 25,001 – 50,000
- ☐ 50,001 – 100,000
- ☐ 100,001 or more

Please indicate your familiarity with US restaurant tipping customs:

(1 = Very unfamiliar, 7 = Very familiar)

1      2      3      4      5      6      7

On average, how many times per month do you dine out at full-service restaurants?

**Restaurant B (mandatory gratuity)**

<p><i>All-You-Can-Eat</i></p> <p><b>Sunday Brunch</b></p> <p><b>10:00 AM until 2:00 PM</b></p> <p><i>French Toast</i> <i>Eggs Benedict</i> <i>Bacon &amp; Sausage</i> <i>Homemade Pancakes</i> <i>Fresh Fruit</i> <i>Coffee, Tea &amp; Orange Juice</i> <i>And Other Traditional Breakfast Favorites</i></p> <div style="border: 1px solid black; padding: 5px; text-align: center;"><p><b>\$8.95 per person</b> A mandatory 15% service gratuity will be added to your bill</p></div> <p>RESERVATIONS 1975 8848</p>
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## APPENDIX C: STUDY 3

### OVERVIEW

You are invited to participate in a research study about the effectiveness of restaurant advertising flyers. You must be 18 years old to participate.

There are no known discomforts or risks associated with participation in this study.

Your participation is voluntary and you are free to withdraw at any time. Your responses to the questions will be anonymous. The study will take less than 10 minutes to complete.

Thank you for participating in this study.

### SCENARIO (Very important to read!)

Imagine that you are on a week-long vacation, visiting a large capital city in Africa.

You have dined out at several downtown restaurants and enjoyed the food. You have learned that the exchange rate of US dollar for local currency is approximately 1:1 and it is customary for restaurant patrons to leave 15% as tips. *[it is customary for local restaurants to add a 15% mandatory service gratuity.]*

You want to have a brunch in the coming Sunday. There are two local restaurants famous for their Sunday Brunches. You have not been to either restaurant before but have heard that the quality of food and service of both restaurants is pretty good. In the following screens, you will see Sunday Brunch flyers for each restaurant with food and price information sequentially. After reading each flyer, you will be asked to

answer several questions about this restaurant. There is also a general background survey in the end of the questionnaire.

First, please answer the following questions based on what you have learned in the scenario.

- What continent are you visiting in the scenario?
- What is the exchange rate of US dollar for local currency in the scenario?
- What is the custom regarding tips/service charges in the country described in the scenario?



The Sunday Brunch at restaurant A is:  
(1 = Extremely inexpensive, 7 = Extremely expensive)

1      2      3      4      5      6      7

The Sunday Brunch at restaurant A is:  
(1 = Extremely low-priced, 7 = Extremely high-priced)

1      2      3      4      5      6      7

I expect that the quality of food and service for the Sunday Brunch at restaurant A is:  
(1 = Very poor, 7 = Very high)

1      2      3      4      5      6      7

I think the flyer for Sunday Brunch at restaurant A is:  
(1 = Very unattractive, 7 = Very attractive)

1      2      3      4      5      6      7

Restaurant B (voluntary gratuity)



The Sunday Brunch at restaurant B is:  
(1 = Extremely inexpensive, 7 = Extremely expensive)

1      2      3      4      5      6      7

The Sunday Brunch at restaurant B is:  
(1 = Extremely low-priced, 7 = Extremely high-priced)

1      2      3      4      5      6      7

Please choose one of the following three statements:

When evaluating the expensiveness of the Sunday Brunch at restaurant B (the first two questions on this page):

- ☐ I focused mainly on the \$8.95 brunch price.
- ☐ I focused mainly on any applicable tips/surcharges.
- ☐ I focused mainly on the total expense (i.e., the \$8.95 brunch price PLUS any applicable tips/surcharges).

Weight the following statements by allocating 10 chips between them:

To judge the expensiveness of the Sunday Brunch at restaurant B (the first two questions on this page) I used:

\_\_\_\_\_ 1) The \$8.95 brunch price (excluding the 15% mandatory service gratuity)

\_\_\_\_\_ 2) The 15% mandatory service gratuity

I expect that the quality of food and service for the Sunday Brunch at restaurant B is:

(1 = Very poor, 7 = Very high)

1      2      3      4      5      6      7

I think the flyer for Sunday Brunch at restaurant B is:

(1 = Very unattractive, 7 = Very attractive)

1      2      3      4      5      6      7

Which of the following statements best describes the pricing policy used at restaurant B for the Sunday Brunch?

☐ Tipping is voluntary. Restaurant patrons can leave any amount they deem appropriate.

They usually leave a 15% tip.

☐ Restaurant patrons are required to pay 15% service gratuities on top of the brunch price.

☐ The brunch price is all-inclusive, with no additional tips/service charges.

In fact, restaurant B has a voluntary tipping policy [adds a mandatory 15% service gratuity to all checks]. Please use the scales below to express your reactions to that voluntary tipping policy [mandatory service gratuity].

-Voluntary tipping [The mandatory 15% service gratuity] for the Sunday Brunch at restaurant B is:

(1 = Very unfair, 7 = Very fair)

1      2      3      4      5      6      7

-Voluntary tipping [The mandatory 15% service gratuity] for the Sunday Brunch at restaurant B is:

(1 = Very unreasonable, 7 = Very reasonable)

1      2      3      4      5      6      7

-Voluntary tipping [The mandatory 15% service gratuity] for the Sunday Brunch at restaurant B is:

(1 = Very unjustified, 7 = Very justified)

1      2      3      4      5      6      7

How much would you voluntarily tip in dollars and cents above and beyond the mandatory payment for the \$8.95 Sunday Brunch at restaurant B?

Thinking about the country as a whole and not about restaurant B specifically, what is the common practice regarding tips/service charges in the country described in the scenario?



- It is customary for local restaurants to add a 15% mandatory service gratuity.
- Tipping is voluntary. It is customary to leave 15% as tips.



Here are the two Sunday Brunch flyers again. Which restaurant would you like to go for Sunday Brunch?

(1 = Definitely Restaurant A, 7 = Definitely Restaurant B)

1      2      3      4      5      6      7

Please answer the following questions based on your personal experience:

If you dine out at a full-service restaurant where tipping is voluntary, what percent would you tip for satisfactory food and service at full-service restaurant?

Please indicate your level of agreement with the following statements:

(1 = Very much disagree, 7 = Very much agree)

-The practice of voluntary tipping is more common among upscale restaurants than among less expensive ones.

1      2      3      4      5      6      7

-The practice of adding automatic gratuities to bills is more common among upscale restaurants than among less expensive ones.

1      2      3      4      5      6      7

-The practice of including the cost of service in menu prices is more common among upscale restaurants than among less expensive ones.

1      2      3      4      5      6      7

Please evaluate the following statements:

(1 = Very much disagree, 7 = Very much agree)

-In general, a restaurant tip should be earned, not automatic.

1      2      3      4      5      6      7

-I do not like being forced to pay tips at restaurants.

1      2      3      4      5      6      7

-Restaurant customers should decide whether to tip and how much to tip.

1      2      3      4      5      6      7

Please tell us about yourself.

How old are you?

What is your gender?

- ☐ Male
- ☐ Female

What is your race?

- ☐ White/Caucasian
- ☐ African American
- ☐ Hispanic
- ☐ Asian
- ☐ Mixed/Others

Are you a US citizen or permanent residents?

- ☐ Yes
- ☐ No

What is the highest level of education you have completed?

- ☐ Less than High School
- ☐ High School Graduate
- ☐ Some College
- ☐ College Graduate
- ☐ Post-graduate

What is your combined annual household income?

- ☐ Less than 25,000
- ☐ 25,001 – 50,000
- ☐ 50,001 – 100,000
- ☐ 100,001 or more

Please indicate your familiarity with US restaurant tipping customs:

(1 = Very unfamiliar, 7 = Very familiar)

1      2      3      4      5      6      7

On average, how many times per month do you dine out at full-service restaurants?

Restaurant B (mandatory gratuity)

<p><i>All-You-Can-Eat</i></p> <p><b>Sunday Brunch</b></p> <p><b>10:00 AM until 2:00 PM</b></p> <p><i>French Toast</i> <i>Eggs Benedict</i> <i>Bacon &amp; Sausage</i> <i>Homemade Pancakes</i> <i>Fresh Fruit</i> <i>Coffee, Tea &amp; Orange Juice</i> <i>And Other Traditional Breakfast Favorites</i></p> <div style="border: 1px solid black; padding: 5px; text-align: center;"><p><b>\$8.95 per person</b> A mandatory 15% service gratuity will be added to your bill</p></div> <p>RESERVATIONS 1975 8848</p>
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# CHAPTER 3

## THE PSYCHOLOGICAL MECHANISMS FOR PROCESSING PARTITIONED PRICE: AN INTEGRATIVE FRAMEWORK

### *Introduction*

Price partitioning, the practice of breaking up a single price of a product and/or service into two or more mandatory parts and presenting them individually to consumers, has been a popular pricing strategy used by many firms. For example, catalogue and infomercial companies typically list price of the advertised product along with a shipping and handling fee. Internet retailers such as Amazon and Drugstore often attach a delivery charge to the subtotal of an online transaction on the check out page. In the hospitality industry, the past decade has witnessed a surge of various surcharges, from the increasingly popular automatic service gratuities at upscale table-service restaurants to the now-widespread fuel surcharges and baggage fees on air travel.

The ubiquitous presence of partitioned prices in the marketplace has long attracted a great deal of attention from academia. In particular, a growing body of research in behavioral pricing has demonstrated that, contrary to the principle of description invariance prescribed by normative economics theory (Tversky & Kahneman, 1981), consumers respond differently to partitioned versus consolidated presentation of the same price in terms of perception, evaluation and choice (for a recent review, see Morwitz, Greenleaf, Shalev, & Johnson, 2009). There is little consensus, however, as to whether partitioned prices would bring about more positive

consumer reactions and hence increase a firm's profitability relative to financially equivalent combined prices.

On the one hand, according to prospect theory (Kahneman & Tversky, 1979) and mental accounting principles for compound outcomes (Thaler, 1985, 1999), if consumers view each separately listed price they have to pay to acquire a product and/or service as a single loss, then they should prefer a combined price over an equivalent partitioned price. This is because losses should be integrated rather than segregated in order to minimize disutility (Thaler, 1985). Several studies in the price bundling literature have provided empirical support for this prediction. For instance, using an automobile bundle, Johnson, Herrmann, & Bauer (1999) showed that presenting the offer with a consolidated price leads to greater satisfaction and a higher likelihood of recommending the offer to other people as well as of repurchasing the brand than presenting the offer with separate price tags for each bundle component.

On the other hand, some researchers suggested that the presence of multiple tags in a partitioned price tends to encourage selective attention to and differential processing of the secondary price information or its associated benefits. As a result, price partitioning can influence consumers' perceptual judgments and either increase or decrease demand relative to price consolidating. In a seminal paper by Morwitz, Greenleaf, & Johnson (1998), the researchers demonstrated that dividing the all-inclusive price of an AT&T telephone sold through a catalog into a base price plus a typical shipping and handling fee reduced participants' recalled total purchase costs and increased its choice share relative to a SONY telephone with an all-inclusive price available at a local store. Studies in this research stream have since identified and

examined a variety of mediators and moderators of the framing effect of price partitioning on evaluation and behavioral consequences.

### **Objectives of the Review**

The aforementioned discussion suggests that behavioral scientists have approached the issue of price partitioning from different angles. Due to this perspective difference, sometimes complementary and sometimes competing explanations of the price partitioning effect on price perception and its downstream behavioral implications coexist in the literature. Greater insights would be gained if those different psychological mechanisms and the associated moderators can be integrated into a unifying conceptual framework. The purpose of this paper is therefore to provide a synthetic review of the underlying psychological mechanisms in extant price partitioning literature and develop an integrative framework that may potentially encompass and explain the varied findings in this area.

### **Scope of the Review**

Partitioned price, in its original form, consists of two mandatory components: a base price and a surcharge. Usually the surcharge represents a service component necessary for consumers to acquire, utilize or dispose the product such as a shipping and handling fee or a recycling fee. Some researchers, in their study of price partitioning effect, also examined cases of price bundling or de-bundling in which two or more distinct products in a multi-component bundle are priced together as one consolidated price or separately for each bundle component (e.g., a refrigerator and an

icemaker). Although Morwitz et al. (1998) and others stressed the differences between price partitioning and price debundling, I include studies in both research areas in this review for the sake of completeness. However, to facilitate the conceptualization of a unifying processing model, I restrict my focus to price debundling studies where all bundle components are mandatory and no discount/promotion information (e.g., bundle component discount or total bundle savings) are presented.

### **Organization of the Review**

The balance of the paper is organized as follows. I begin by providing a critical review on the various psychological accounts for the price partitioning effect. Next, I develop an integrative framework based on the five characteristics of the secondary price component (SCP) that helps an individual consumer to choose among the seven different processing routes for a partitioned price. I then discuss some contextual and individual factors that affect consumers' perceptions of the characteristics of the SCP and thus alter their choice of processing strategies with the backdrop of the integrative framework. Finally, a general discussion on contributions, implications and suggestions for future research is provided.

### ***Psychological Mechanisms for Processing Partitioned Prices***

Although there is a general consensus that consumers react differently to partitioned versus consolidated presentation of the same price, questions remain as to what psychological mechanisms drive the observed framing effect of price presentation in consumer evaluation and demand.

In this section, I present a review of the various theoretical accounts of the price partitioning effect identified from the existing literature. I broadly classify them into two main categories: mental accounting principles for compound outcomes and selective attention and differential processing. The former has its roots in prospect theory. The latter and its ramifications lay emphasis on the notion that consumers are cognitive misers and often selectively attend to and process available information. Figure 3.1 shows a schematic typology of these explanations.

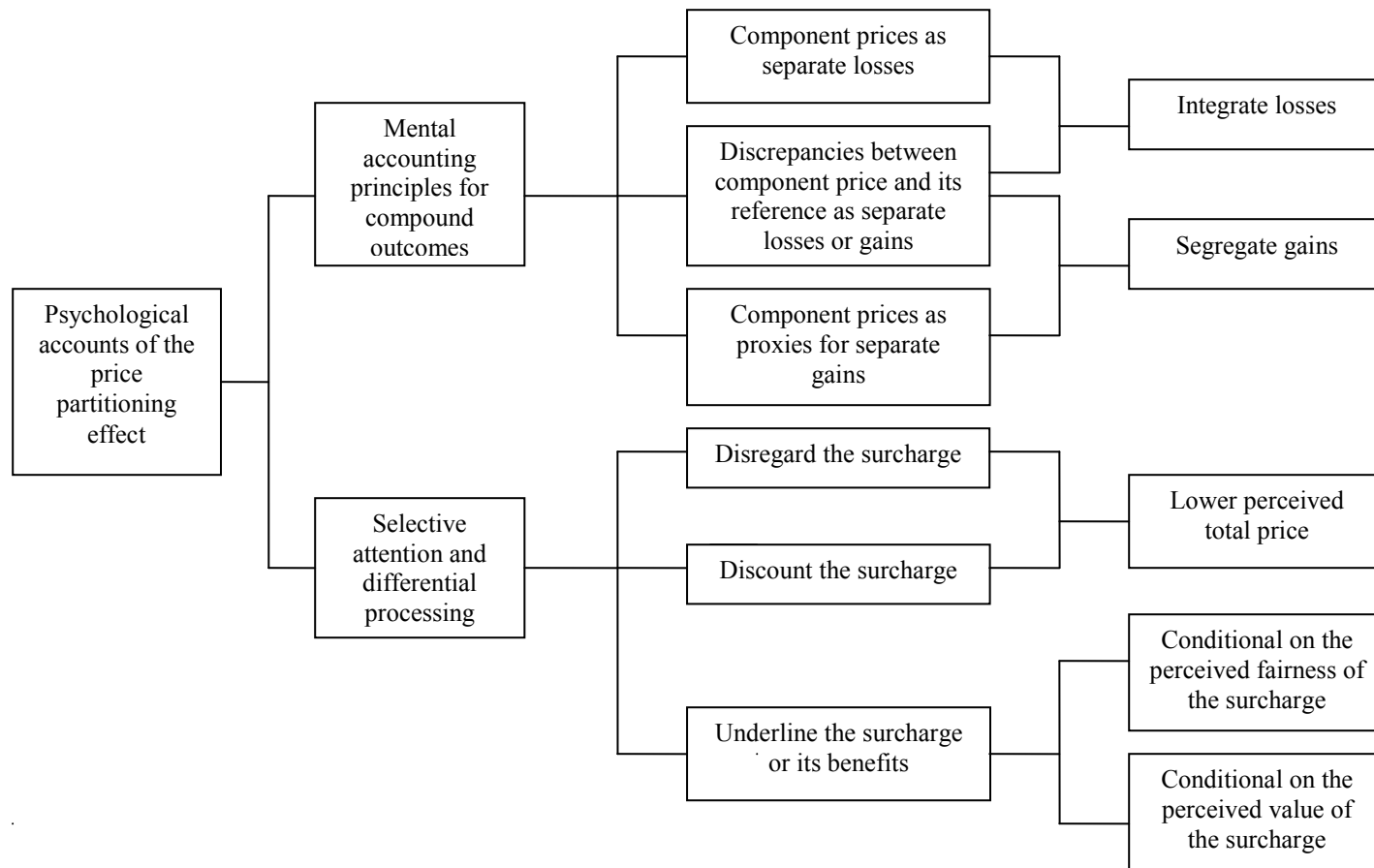
### **Mental Accounting Principles**

One popular account of the underlying mechanism for processing partitioned prices is based on the contention that people perceive the payment of partitioned prices (consolidated prices) as multiple events (a single event) and that the way they encode and/or edit compound outcomes of those events influences their judgment and choice as set forth by prospect theory and mental accounting principles described in details below.

#### **Prospect Theory and Mental Accounting Principles**

Kahneman & Tversky (1979) proposed that people generally perceive decision outcomes as gains or losses in relation to a reference point. These perceived gains and losses are then mapped onto subjective utility via a value function. Evaluations and choices are based on the resulting perceived value. Central to prospect theory is a value function with three features: (1) outcomes are framed as gains or losses relative





**Figure 3.1 A schematic typology of psychological accounts for the price partitioning effect**

to a reference point; (2) the function is concave in the domain of gains and convex in the domain of losses (i.e., positive diminishing returns to marginal gains and negative diminishing returns to marginal losses); (3) the function for losses is steeper than that for gains (i.e., people strongly prefer avoiding losses to acquiring gains of the same magnitude). These properties yield an asymmetric S-shaped value function.

Thaler (1985) extended prospect theory of a single event to explain how people encode compound (joint) outcomes of multiple events. Although people may evaluate the component outcomes together or separately, he suggests that due to the special characteristics of the value function a person can attain greater value from a particular set of compound outcomes if he or she follows the four mental accounting principles:

1. Segregation is preferred for multiple gains;
2. Integration is preferred for multiple losses;
3. When outcomes involve both gains and losses but gains outweigh losses, integration is preferred for this mixed gain;
4. When outcomes involve both gains and losses but losses outweigh gains, segregation is preferred for a large gap between gains and losses (e.g., a \$40 gain and a \$6000 loss) and integration is preferred if there is a smaller gap between gains and losses (e.g., a \$40 gain and a \$50 loss).

#### Encoding and Editing the Gains and Losses for Partitioned Prices

The four mental accounting principles for compound outcomes have been backed up by both anecdotal evidence and empirical tests (Thaler, 1999). It is suggested, however, that people may encode the same outcome (i.e., a loss or a gain)

quite differently depending on the specific reference points they use in a decision problem (Fischhoff, 1983). In addition, they often edit the presented decision frames for cognitive or hedonic reasons (Thaler & Johnson, 1990). Therefore, even though mental accounting principles generally hold true, the same decision problem can lead to inconsistent results due to a different encoding and editing of compound outcomes.

A closer scrutiny of price bundling literature revealed that there is indeed less consensus among researchers on what constituted losses and gains in evaluating a price bundling offer. For example, several researchers assumed that consumers encode a price or payment as a monetary loss (Drumwright, 1992; Johnson et al., 1999; Hyeong Min Kim, 2006). In that case, the multiple price components in a partitioned price represent multiple losses whereas the equivalent consolidated price represents a single loss. Because the value function is convex in the domain of losses, multiple losses should be perceived as lower if they are integrated into a single loss. This theorizing leads to the prediction that, all else being equal, consumers should respond more favorably to consolidated rather than partitioned presentation of a bundle price.

Although Chakravarti, Krish, Paul, & Srivastava (2002) shared the same view on encoding prices as losses, they argued that consumers also tend to edit (reframe) the presented price information. They suggested that consumers exposed to partitioned bundle prices may first add up component prices to determine the total bundle price and then encode the “edited” price as a single loss. This editing would render the mental account on the loss side (price) identical, regardless of whether there is a single price tag for the bundle or separate price tags for each bundle component. In contrast, they argued that different price presentations are likely to affect the gain (i.e.,

component benefit) side of the mental account. Consumers usually code and evaluate component benefits separately. But in the consolidated bundle price scenario, they are more likely to integrate component benefits and evaluate them as a whole because “consolidated presentations may encourage holistic evaluation of the bundle component benefits”(Chakravarti et al., 2002, p. 217-218). According to the mental accounting principle, segregated gains are perceived larger than the integrated ones of the same scale because of the concavity of the value function. Therefore, with identical perceived losses, consumers would evaluate bundling offerings more favorably when prices are partitioned among bundle components than when prices are consolidated.

One potential drawback with the application of prospect theory and mental accounting principle to the price bundling context as described above is the coding of price as monetary loss. Thaler (1985) claimed that loss aversion makes the coding of the forgone money (i.e., cost) as a loss hedonically inefficient because of the high coefficient of loss aversion (estimated at 2.25). In the same vein, Kahneman & Tversky (1984) also cautioned that payments consumers make to acquire products and/or services should not be viewed as uncompensated losses. Instead, they proposed that price should be treated as proxies for the consumption benefits of the goods acquired. If this is the case, the mental accounting principle of segregating multiple gains implies that consumers should prefer partitioned prices over consolidated prices in evaluating a bundle offer.

Another conceptualization of losses and gains in the price bundling context is derived from the concept of reference price and transaction utility (Thaler, 1985,

1999). Some researchers suggested that when evaluating a partitioned bundle prices, consumers first use the expected price of each partitioned bundle component and compare it with the posted component price (Janiszewski & Cunha, 2004; Kaicker, Bearden, & Manning, 1995; Mazumdar & Jun, 1993). This comparison process gives rise to positive transaction utility (i.e., gains) when the reference price of the bundle component is lower than the posted price or negative transaction utility (i.e., losses) when the reference price of the bundle component is higher than the posted price. Consumers then evaluate the joint outcome of individual comparisons according to mental accounting principles. For instance, when a consumer's expected price for each bundle component is lower than the posted bundle price (i.e., a case of multiple gains), he or she would prefer partitioned prices over corresponding consolidated prices because multiple gains result in a higher transaction utility when they are segregated than when they are integrated.

Table 3.1 presents selected studies in the price bundling area with different conceptualizations of losses and gains and their predictions according to relevant mental accounting principles.

### Limitations of the Mental Accounting Explanations

Although the aforementioned studies provide some empirical support for the mental accounting explanations of the price partitioning effect, there are several limitations to this line of work. First, as discussed earlier, there is considerable lack of agreement among researchers on what constitute losses and gains in the price partitioning context, which sometimes leads to inconsistent predictions. In addition,

**Table 3.1 Different Conceptualizations of Gains and Losses and Implications for Price Bundling**

<i>Author(s )</i>	<i>Price format</i>	<i>Loss(es)</i>	<i>Gain(s)</i>	<i>Predictions</i>
<b>Chakravarti et al. (2002)</b>	<i>Consolidated Price</i>	The total price as a single loss	The sum of component benefits as an integrated single gain (holistic evaluation)	Segregate gains: partitioned prices are preferred over consolidated prices
	<i>Partitioned price</i>	The sum of component prices (total price) as a single loss	Each individual component benefit as a separate gain	
<b>Drumwright (1992)</b>	<i>Consolidated Price</i>	The total price as a single loss	Each individual component benefit as a separate gain	Integrate losses: consolidated prices are preferred over partitioned prices
	<i>Partitioned price</i>	Each individual component price as a separate loss	Ditto	
<b>Kahneman and Tversky (1984)</b>	<i>Consolidated Price</i>	N/A	The total price as a proxy for the integrated component gains	Segregate gains: partitioned prices are preferred over consolidated prices
	<i>Partitioned price</i>		The component prices as proxies for separate component gains	
<b>Johnson et al. (1999)</b>	<i>Consolidated Price</i>	The total price as a single loss	N/A	Integrate losses: consolidated prices are preferred over partitioned prices
	<i>Partitioned price</i>	Each individual component price as a separate loss		
<b>Kaicker et al. (1995)</b>	<i>Consolidated Price</i>	The negative difference between the total price and the sum of component reference prices as a single gain	The positive difference between the total price and the sum of component reference prices as a single loss	Partitioned prices are preferred over consolidated prices with multiple gains and high net loss; consolidated prices are preferred over partitioned prices with multiple losses (not supported), mixed gains, and low net loss
	<i>Partitioned price</i>	The negative difference between individual component price and its reference price as a separate gain	The positive difference between individual component price and its reference price as a separate loss	

recent work on behavioral pricing has provided some contradictory evidence on both the postulation that consumers code prices paid for goods as losses (Novemsky & Kahneman, 2005) and the conceptualization of losses and gains as the discrepancies between the observed price and the expected price (Kaicker et al., 1995). Research on the pain of paying (Prelec & Loewenstein, 1998) also suggests that consumers might not treat prices simply as value tags for the component benefits (i.e., gains) as advocated by Kahneman & Tversky (1984).

Another problem with the mental accounting interpretation of the price partitioning effect is the (implicit) assumption that consumers will attend to and process both the primary and secondary price information in their evaluation. This is often not the case. For example, Kim (2006) demonstrated that the integration-of-losses principle prevails only when the surcharges are visually salient and easy to process. However, when consumers must retrieve a partitioned from memory to make decisions, they tend to recall the base price, which is most prominent among price components, but ignore the surcharge. Consequently, in the latter case, consolidated prices lead to less favorable evaluation than partitioned prices of comparable amount, an opposite pattern predicted by the mental accounting principles.

Finally, even though I assume that consumers pay adequate attention to all price components in a partitioned price, they do not necessarily treat them as separate entities as stipulated by the mental accounting principles. For example, Morwitz et al. (1998) showed that a significant number of participants in their study employed processing strategies to combine the shipping and handling fee with the catalogue price of the telephone to work out the total price, presumably because they regard the

shipping and handling fee as an add-on cost to the focal product. In contrast, when price components in a partitioned price correspond to individual physical products as in a typical price bundle, consumers are more likely to process the price of each component separately and then combine them according to mental accounting principles. This may help explain why empirical support for the mental accounting explanation of price partitioning was mainly found in the price bundling literature.

### **Selective Attention and Differential Processing**

A different stream of research on the price partitioning effect emphasizes the fact that people are cognitive misers and that they generally are not motivated to fully and completely process all the information available to them (Garbarino & Edell, 1997; Taylor & Fiske, 1978). Accordingly, when consumers evaluate a partitioned price, they are more likely to focus on the primary price component and insufficiently process or ignore the secondary price components (Morwitz et al., 1998).

On the other hand, dividing a price into several parts and listing them individually can also make the secondary price components and their associated benefits more visually salient and hence draw increased attention from consumers (Bertini & Wathieu, 2008). Under certain circumstances, the characteristics of the secondary price components or the benefits associated with them may act as a primary driver to shift consumers' preference. In the following section, I organized my discussion of the price partitioning effect on choice and demand as a result of consumers' selective attention and differential processing by three pertinent mediators.



## Perceived/Recalled Total Price

Several researchers argued that the presence of multiple price components in a partitioned price for a product and/or service may cause consumers to ignore or discount the surcharge in their assessment of an offer (Estelami, 2003; Morwitz et al., 1998). Drawing upon the cost/benefit framework (Beach & Mitchell, 1978; Shugan, 1980), Morwitz et al. (2003) proposed three major processing strategies and claimed that a customer would choose a particular strategy to determine the total price if the strategy's perceived benefit (i.e., the expected utility gain resulting from a certain level of expected accuracy in recognizing total price) outweighs the perceived cost (i.e., the time and cognitive effort required to process the price information on the expected accuracy level). Specifically, customers are expected to adopt one of the following processing strategies when interpreting partitioned prices:

1. Calculate the arithmetical sum of the base price and the surcharge.

This full-processing strategy requires the most amount of cognitive effort, but leads to most precise total price recognition. As a result, there should be no difference in total price perception or recall among customers regardless of whether the price is partitioned or combined.

2. Resort to low-effort heuristics to discount the surcharge.

If a consumer does not think it is worthy to calculate the total price by adding the base price and the surcharge precisely, he or she is likely to use such heuristic shortcuts as anchoring and adjustment (Tversky & Kahneman, 1974) to integrate different price components. That is, the consumer tends to anchor on the primary price component that is salient and important (e.g., the base price) and then subjectively

modify it to account for the less salient secondary price components (e.g., the surcharges) in a decreasing order of perceived importance. However, the adjustments are usually inadequate, leading to an underestimate of the total price.

### 3. Completely disregard the surcharge.

In some cases, customers may simply ignore the surcharge, either by failing to notice the surcharge information or by noticing the surcharge but not incorporating it when estimating the total price. The former case may happen when the secondary price components are less salient compared with the primary price component. The latter case is likely to be true when consumers believe that the secondary price components are negligible, and that incorporating this additional information does not lead to a better decision. This strategy requires results in the lowest perceived total prices among the three strategies.

Through a controlled experiment, Morwitz et al. (1998) found that on average more than half of the subjects (54.8%) used heuristic strategy to process partitioned prices. People who completely ignored the surcharge (23.2%) and who used mathematical calculations (21.9%) in processing separated price information accounted jointly for the rest. Because the majority of the customers either discount or ignore the surcharge, even though some customers engage in accurate numerical calculation, on average, the recalled total costs were lower among customers who saw the partitioned prices than those who saw the corresponding combined prices. Based on these results, they concluded that partitioned pricing can reduce consumers' perceptions of total purchase costs and thus increase demand.

Lee and Han (2002), in investigating the negative attitudinal effect of price

partitioning, also found that participants underestimated the total costs for electronic products (computers and stereo equipment) when they were priced with a separate price for delivery and installation than when they were priced with a combined price of the equivalent amount. Their study showed that consumers exposed to partitioned prices recalled total price that were approximately 8% lower than the actual amount.

### Perceived Fairness of the Secondary Price Component

Price fairness has been defined as a judgment of whether a price is reasonable, acceptable, or justifiable (Bolton, Warlop, & Alba, 2003; Lichtenstein & Bearden, 1989; Xia, Monroe, & Cox, 2004). Although price fairness research has traditionally focused on consumer fairness perception of uni-dimensional prices (i.e., a single price tag for a product and/or service) or price changes (Alba & Bolton, 2006; Bolton et al., 2003; Campbell, 1999, 2007), the increasing prevalence of price partitioning strategy has inspired a number of researchers to examine the role perceived fairness plays in consumers' evaluation of partitioned prices. To that end, it has demonstrated that perceived fairness of the surcharge can influence consumers' willingness to bid and shift preference between financially equivalent partitioned prices and consolidated prices (Haws & Bearden, 2006; Sheng, Bao, & Pan, 2007). Consequently, perceived fairness of the surcharge appears to be a key determinant of whether or not the partitioning strategy is more preferable to the bundling strategy. However, some researchers also showed that seller reputation (Cheema, 2008) and consumers' knowledge or belief about firms' manipulative intent (Kachersky & Kim, 2010) can override the impact of perceived surcharge fairness on evaluation and demand.

## Perceived Value of the Secondary Price Component

Taking a different approach to understanding price partitioning effect, Bertini & Wathieu (2008) argued that the impact of price partitioning on choice and demand is not exclusively driven by the price perception per se. Through four experiments, they showed that individual price tags in a partitioned price could encourage consumers to pay more attention to the secondary attributes or benefits that may go unnoticed under an all-inclusive price. As a result, the perceived value of the secondary component may play a key role in offer evaluation and can stimulate or dampen demand. By manipulating the perceived benefits of the secondary component while holding the partitioned price constant, they showed that when the secondary component's perceived benefit outweighed the perceived cost (i.e. a good deal), participants rated the partitioned offer as more attractive than a baseline all-inclusive offer and hence chose the former more often than the latter. However, this pattern was reversed when the secondary component of the partitioned offer was perceived as a bad deal. In addition, they found that the differential impact of different price formats on demand was attenuated when the importance of secondary components tagged with individual price were high or when consumers found the secondary components were difficult to evaluate.

Similarly, Hamilton & Srivastava (2008) suggested that price partitioning often induces consumers to focus on and assess the perceived value of partitioned components. Consequently, the relative benefit consumers believe they will get from those components may shift their preferences for different partitions of the same total price. They further demonstrated that the perceived benefit of the secondary

component in a partitioned offer can be influenced by consumers' usage situations and consumption goals.

In an early study by Chakravarti et al. (2002), the authors varied the component partitioned from a refrigerator bundle either as a consumption-related (i.e., ice maker) or a performance-related (i.e., a service warranty) element. They found that partitioning increases the salience of the benefits or risks of the component partitioned and this increased salience has important implications for bundle evaluation and choice. That is, consumers have more favorable evaluations and higher choice proportions when an ice maker is partitioned than when a service warranty is partitioned. This finding lent further support to the contention that price partitioning can direct consumers' attention to the component partitioned as well as lead consumers to elaborate more on the attributes highlighted by the partitioned component.

### ***How Consumers Process Partitioned Prices: An Integrative Framework***

The above discussion has revealed that different psychological mechanisms have been proposed to explain the price partitioning effect on choice and demand. Although each of them has its own theoretical merits and is supported by empirical evidence, questions remain as to how and why a specific mechanism brings about the price partitioning effect under certain conditions but not under the others.

### **The Characteristics of the Secondary Price Component**

Building upon previous research on price partitioning, I put forward an

integrative framework of partitioned price processing that helps differentiate among various psychological mechanisms responsible for the price partitioning effect. I suggest that although multiple processing pathways coexist when a consumer faces a partitioned price, he or she will take a specific route depending on the salience, diagnosticity, importance, processing difficulty and integrativeness of the secondary price component (hereinafter: SPC) of the partitioned price. I discuss each of the five characteristics in details below.

### The Salience of the SPC

In my framework, I define the salience of the SPC of a partitioned price as the extent to which it draws consumers' attention so that they are less inclined to disregard the SPC in their price evaluation. The most important factor influences the salience of the SPC is the intensity of its visual presentation (Kim & Kachersky, 2006).

Supposedly, consumers are less likely to ignore and more likely to attend to the SPC when it is presented in large print or a dramatic color. In addition, the novelty or unexpectedness of the SPC also plays a role in defining its salience. For example, consumers are often oblivious to routine surcharges such as sales tax. However, if an online retailer posted a surcharge with a less common label like "convenience fees", consumers may pay more attention to them and give them more thoughts.

### The Diagnosticity of the SPC

The diagnosticity of the SPC in a partitioned price refers to the divergence of the SPC from an Well-defined reference level or reference range. I argue that when the

diagnosticity of the SPC is sufficiently high, consumers tend to use it as the primary evaluation base and their aggregate judgment and preference will be biased toward it. In contrast, when the diagnosticity of the SPC is low, consumers may not attain an adequate degree of judgment confidence with the assessment of that price component alone and may need to seek additional information to form an overall price perception.

The diagnosticity of the SPC is closely related to the concept of reference price or price range, the standard against which an observed price is evaluated (Monroe, 1973). By definition, the diagnosticity of the SPC should first depend on whether a consumer has a Well-defined reference price or price range of the SPC. When a consumer finds it difficult to evaluate the SPC because of the lack of comparative standards, he or she may need to turn to other price information to evaluate the overall price (Bertini & Wathieu, 2008).

On the other hand, the existence of a clear reference price or price range of the SPC does not guarantee its high diagnosticity. Rather, I proposed that the diagnosticity of the SPC is further determined by how much it deviates from its reference. Extant pricing literature suggests that divergence from a reference price can induce evaluative judgments such as perceived transaction value (Thaler, 1985, 1999) and perceived price fairness (Xia & Monroe, 2010). In addition, the further the observed price deviates from its reference, the more polarized the evaluations tend to be. Consequently, I argue that the SPC with a higher degree of digression from its reference should have a stronger diagnosticity.

Finally, the diagnosticity of the SPC can be influenced by benefit as well as price information. That is, SPCs where benefits deviate from a well defined reference

level of benefits are more diagnostic than those where benefits do not deviate from expectations. It has been suggested that price partitioning makes the link between cost and benefits for each price component explicit (Chakravarti et al., 2002).

Consequently, when consumers associate a standard package of consumption benefits with the SPC, then any discrepancy between the package coming with the SPC and its reference can lead to positive or negative value judgments on the benefits associated with the SPC and shift their overall preference.

### The Importance of the SPC

In my framework, when consumers attend to and perceive both primary and secondary price information in their price evaluation, the relative decision weight of the SPC in the overall evaluation and choice is partially determined by its importance. It has been suggested that when the SPC is within its reference range, its importance is positively related to its relative magnitude to the primary price component (hereinafter: PPC). Xia & Monroe (2004) maintained that people tend to inadequately process small surcharges because whether to integrate them to the base price does not make a significant difference in price judgment or decision making. When the relative magnitude of the surcharge is large, however, it represents a significant part of the base price and becomes a non-trivial part of the total purchase cost. Therefore, consumers may become motivated to process the surcharges more thoroughly and accurately.

### The Processing Difficulty of the SPC



When the SPC is high in salience but low in diagnosticity and importance, the extent to which consumers will take it into consideration depends on how difficult it is for them to process. Presumably, consumers should be more motivated to take into account the SPC in their price evaluation when consolidating the SPC into the PPC involves little computational complexity (e.g., a round number).

Previous research has suggested that, as a general rule, it is more difficult to process information presented in proportions than in raw units (Estelami, 2003). For example, when the surcharge is presented as a percentage of the base price, both a multiplication and an addition are needed to calculate the total cost, which requires more cognitive efforts than when the surcharge is presented as a dollar amount. Consequently, relative to an equivalent dollar surcharge, consumers are more likely to use simple heuristics to process the percentage surcharge or ignore it altogether, leading to a lower recalled total price and/or a higher purchase intention (Kim & Kramer, 2006).

Morwitz et al. (1998) provided empirical support for this contention. The results of their second study showed that although there was no significant difference in the percentage of participants who used the heuristic strategy to process the partitioned price between the percentage surcharge (54.8%) and the dollar surcharge conditions (54.9%), the percentage of participants who simply ignored the surcharge were significantly higher for the former (35.6%) than for the latter (12.2%). As a result, participants recalled a lower total cost when the surcharge was present in percentage term (\$75.43) than in a dollar amount (\$80.36).

## The Integrativeness of the SPC

The integrativeness of the SPC is critical in determining whether consumers will resort to mental accounting principles in their partitioned price evaluation. When the integrativeness is high, consumers tend to combine the partitioned price components first and then evaluate them as a whole. On the contrary, when the integrativeness is low, consumers will view each price component as a separate entity and are more likely to evaluate them individually and then use relevant mental accounting principles to arrive at the compound outcome.

As I discussed previously, the integrativeness of the SPC should depend on its affiliation with the PPC. For example, when the SPC represents a service component required for consumers to obtain or use the product, its integrativeness should be high. On the other hand, when the SPC corresponds to a bundled physical product that can be sold independently, as in the typical cases of price bundling, its integrativeness should be low.

## **An Integrative Framework of Partitioned Price Processing**

I now describe an integrative framework on how an individual consumer choose among different processing routes to perceive and evaluate a partitioned price with the five characteristics of the SPC acting as a series of route signs (please see figure 3.2). The first characteristic that influences individuals' choice of processing routes is the salience of the SPC. Conceivably, consumers need to first attend to and perceive the SPC before considering it in their price evaluation. However, because people have limited working memory capacity, they often exert selective attention

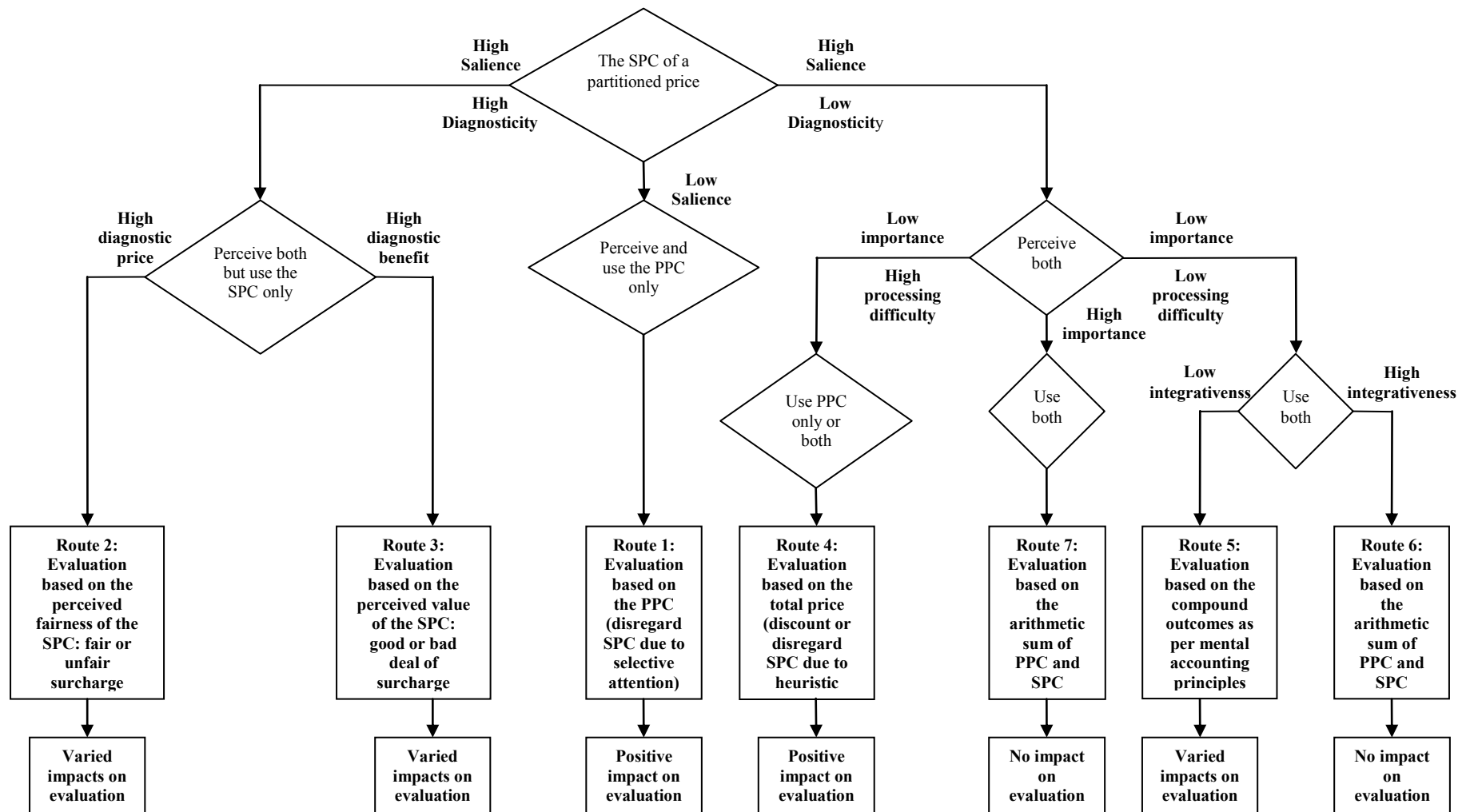


Figure 3.2 An integrative framework of partitioned price processing and its impact on evaluation

(Berlyne, 1960), focusing on prominent stimuli and ignoring less salient ones.

Consequently, when the salience of the SPC is low, consumers may be oblivious to its existence and their total price perception is based on the PPC only (Route 1).

Kim (2006) examined the interaction effect between the format of surcharge and the visual salience of surcharge. He showed that the presentation effect of dollar versus percentage surcharge prevailed only when the surcharge font is the same as the base price font. When the visual salience of the surcharge decreased with the use of smaller font, no presentation effect observed, presumably because of participants' failure to attend to the surcharge information in the first place.

When the SPC is salient enough to attract consumers' attention, the diagnosticity of the SPC will exert an impact on consumers' further selection of processing mechanisms. In my proposed model, the SPC is highly diagnostic if it deviates from a Well-defined reference price or price range. It is suggested that consumers often use their fairness perceptions of the SPC resulting from price deviation as the primary evaluation base such that their preferences are shifted by their perceived fairness of the SPC (Route 2) (Burman & Biswas, 2007; Cheema, 2008; Kachersky & Kim, 2010; Sheng et al., 2007). For example, Sheng et al. (2007) manipulated both the absolute and relative level of the surcharge to induce perception of (un)fairness of the surcharge among undergraduates. In the first study, they showed that participants have higher purchase intention when the surcharge was low but lower purchase intention when the surcharge was high compared with corresponding consolidated prices. However, partitioned versus consolidated pricing did not influence demand when surcharge was at the moderate level, presumably because the

modest surcharge was within its reference range and did not bring on any fairness perception. In a second study, the authors kept the surcharge constant across conditions but varied the base price and found results suggesting that consumers use the base prices as a reference that can affect the diagnosticity of the surcharge. In the low base price condition (i.e., relatively high surcharge), the shipping and handling charges for a digital watch was price higher than the price for the watch itself, leading to a more negative reaction to price partitioning than to price consolidating. The opposite is true when the base price was greater than the surcharge. The findings demonstrated that the relative magnitude of the surcharge to the base price can also influence surcharge fairness perception as well as purchase intention.

Extant research has also suggested that the benefit based diagnosticity of the SPC can influence consumers' overall assessment of a partitioned price as well (Route 3) (Bertini & Wathieu, 2008; Gaeth, Levin, Chakraborty, & Levin, 1991; Hamilton & Srivastava, 2008). Specifically, *ceteris paribus*, the more consumption benefits consumers associate with the SPC, the higher perceived value they derive from the SPC, which in turn shape their overall price evaluation. For instance, holding the surcharge and the base price constant, Bertini and Wathieu (2008) showed that when the delivery service provided by an online grocer offers more benefits to customers in terms of wider choice and more flexibility, the partitioned presentation of a \$86 shopping basket subtotal plus a \$9 scheduling service fee induced better offer perception and higher purchase intention than the combined presentation of a \$95 all-inclusive price. However, the opposite pattern was true when consumers thought the delivery service were inconvenient.

Although both the price and the benefit information of the SPC can have a significant impact on a consumer's choice and demand, I believe that he or she will focus on the more diagnostic of the two (i.e., either Route 2 or Route 3). For example, when consumers do not have a well-defined reference price for the SPC or when the SPC falls within its reference range, they may instead evaluate the partitioned price based on whether the SPC conveys more or less consumption benefits relative to a reference transaction (Bertini & Wathieu, 2008) or in a particular consumption situation (Hamilton & Srivastava, 2008).

In cases where the SPC has high salience but low diagnosticity, consumers may turn to both the primary and secondary price information in their overall evaluation. However, as cognitive misers (Taylor & Fiske, 1978), they are usually less motivated to fully and accurately process all information available to them. I hence propose that when the SPC is relatively unimportant, probably due to its small magnitude relative to the PPC, consumers are predisposed to process the SPC inadequately or even ignore it altogether when the processing difficulty of the SPC is high (Route 4). Some researchers also suggested that consumers are less likely to apply mental accounting principles with complex percentage-based pricing frames (Heath, Chatterjee, & France, 1995) or memory-based price evaluations (Kim, 2006).

I further argue that when the SPC is low in both importance and processing difficulty (e.g., a relatively small and easy-to-calculate surcharge), the integrativeness of the SPC should determine whether consumers will evaluate a partitioned price by simple arithmetic calculation or according to appropriate mental accounting principles. When product components behind individual price tag in a partitioned price

correspond to separate physical commodities as in the cases of price bundling, consumers are more likely to use mental accounting principles to evaluate a partitioned price (Route 5). On the other hand, when the SPC represents an add-on charge for a service component necessary to acquire, consume or dispose the focal product (e.g., a shipping fee), consumers tend to add individual price components together before evaluating the total price (Route 6). It should be noted that when the SPC is a whole number or can be treated as one by rounding up (e.g., 39.95) the two processing routes have different implications. Whereas the price partitioning effect remains when consumers employ mental accounting principles (Route 5), there will be no differences between price partitioning and price consolidating if consumers use a calculation strategy to process the partitioned price (Route 6).

As a final point, when the SPC is high in relative importance (e.g., a relatively large surcharge), the benefits gained with a more accurate and complete price evaluation will outweigh the cost of spending additional cognitive efforts to adequately deal with the SPC. Consequently, I argue that consumers will opt for full-processing mode by precisely calculating the total price as the arithmetic sum of both price components, thus potentially eliminating the price partitioning effect (Route 7). For example, Xia & Monroe (2004) suggested that the presentation effect of percentage versus dollar surcharge may only occur when the surcharge is a small amount relative to the base price (i.e., low importance). People tend to ignore or discount small surcharges because they are inconsequential in price evaluation. When the relative magnitude of the surcharge is large, however, it represents a significant part of the base price and becomes a non-trivial part of the total purchase cost.

Therefore, consumers may become motivated to process the surcharges more carefully and accurately even if they are difficult to process (i.e., in percentage format). In their first study, Xia & Monroe (2004) found that when the surcharge amount was small (either 6% of the base price or \$72) for a \$1200 desktop, purchase intentions were higher for percentage surcharges than for dollar surcharges. However, when the surcharge amount was large relative to the \$1133 base price (either 12% or \$136), the presentation effect of surcharges disappeared. Participants indicated similar purchase intentions across conditions.

### **Factors Influence Consumers' Perceptions on the Characteristics of the SPC**

Up to this point, I have identified five characteristics of the SPC and proposed an integrative framework of partitioned price processing from the perspective of an individual consumer. I argued that the five characteristics of the SPC jointly can decide which of the seven processing routes an individual consumer will take when he or she is exposed to a partitioned price. However, the extant literature suggests that a variety of factors other than the five identified characteristics may alter a consumers' processing strategy. Below I discuss those other factors in the setting of my integrative framework of partitioned price processing. Specifically, I argue that the effects of these other factors either identify boundary conditions of the model or are due to the ways that change perceptions of one or more of the key SPC characteristics in the model (please see table 3.2).



**Table 3.2: Factors influence consumers' perceptions on the characteristics of the SPC**

Price Stimuli	Salience of the SPC	Diagnosticity of the SPC	Importance of the SPC	Processing Difficulty of the SPC	Integrativeness of the SPC	Processing Route
Burman & Biswas (2007): For a 21-day advance purchase of an airline ticket \$288.50 all-inclusive vs. 249.00 for ticket + 39.50 taxes and processing fees	<b>High salience: Low NFC</b>	Low diagnosticity: reasonable surcharge	Low importance:	Low processing difficulty: rounding up as \$40	High integrativeness: tax surcharges	Route 6
	<b>Low salience: High NFC reduces the perceived salience</b>	N/A	N/A	N/A	N/A	Route 1
Schindler et al., (2005): For a table lamp \$80 and no shipping charge vs. \$65 plus \$15 shipping charge (External reference price: \$65 for similar lamps in retail stores)	<b>High salience: shipping-charge skeptics</b>	<b>High diagnosticity: shipping-charge skepticism enhances the perceived diagnosticity</b>	N/A	N/A	N/A	Route 2
	<b>Low salience: low shipping-charge skepticism reduces the perceived salience</b>	N/A	N/A	N/A	N/A	Route 1
Cheema (2008): For a LCD computer monitor \$339.99 plus \$13.25 S&H or \$309.99 plus \$43.25 S&H	<b>High salience: bad seller reputation increases the perceived salience</b>	<b>High diagnosticity: low reputation seller with either fair or unfair surcharges (especially for high NFC)</b>	N/A	N/A	N/A	Route 2
	(High salience: surcharges were visually salient even for good seller reputation condition)	<b>Low diagnosticity: high reputation seller with either fair or unfair surcharges (especially for high NFC);</b>  <b>Seller reputation may override the perceived diagnosticity for low NFC</b>	Low importance: relative low level of surcharge	Low processing difficulty: rounding up or down	High integrativeness: S&H fee is an integrated part of the offer	Route 6

Kachersky & Kim (2011): For a MPS player \$189.95 plus \$10 shipping or \$139.95 plus \$60 shipping vs. \$199.95 all-inclusive (participants were made to believe that firms use partitioned prices to draw consumers' attention to the base price but not to the surcharge)	High salience	<b>High diagnosticity: unfair surcharges for those who have price-persuasion knowledge on price consolidating</b>	N/A	N/A	N/A	Route 2
		<b>Low diagnosticity: individual price-persuasion knowledge on price partitioning overrides the perceived diagnosticity</b>	Low importance (for \$10): low level of surcharge High importance (for \$60): high level of surcharge	Low processing difficulty: easy calculate numbers  N/A	High integrativeness: shipping is an integrated part of the offer N/A	Route 6  Route 7
Burman & Biswas (2007): For a MP3 player \$199.00 plus \$8.95 S&H or \$189.00 plus \$18.95 S&H vs. an all-inclusive price of \$208.00	High salience	<b>High diagnosticity: high NFC enhances the perceived diagnosticity</b>	N/A	N/A	N/A	Route 2
		<b>Low diagnosticity: low NFC decreases the perceived diagnosticity</b>	Low importance: relative low level of surcharge	Low processing difficulty	High integrativeness: S&H fee is an integrated part of the offer	Route 6
Morwitz et al., (1998): For a AT&T telephone \$69.95+\$12.95 s&h or \$69.95+18.5% s&h or \$82.90 incl s&h vs. a SONY telephone \$64.95	High salience	Low Diagnosticity	<b>High importance: moderate brand affect</b>	N/A	N/A	Route 7
			<b>Low importance: High &amp; low brand affect</b>	High processing difficulty: percentage surcharge	N/A	Route 4
Kim & Kramer (2006): For a AT&T telephone AT&T \$64.99+\$12.49 shipping vs. \$64.99+19.2% shipping	High salience	Low Diagnosticity	Low importance: relative low level of surcharge	<b>High processing difficulty: percentage surcharge for low NFC</b>		Route 4
				<b>Low processing difficulty: percentage surcharge for high NFC; dollar surcharge for both</b>	High integrativeness	Route 6

## Factors Influence the Saliency of the SPC

*Need for Cognition (NFC).* Need for cognition (hereinafter: NFC) refers to “the tendency of individuals to engage in and enjoy thinking” (Cacioppo & Petty, 1982, p. 116). NFC influences the extent to which people encode and process information. Consumers with high NFC are intrinsically motivated to search for, acquire and process information in a systematic way whereas low NFC consumers are more likely to pay attention to easy-to-process cues (e.g., sales signs or seller reputation) and process information heuristically.

Burman & Biswas (2007) examined how NFC influences the impact of price partitioning on perceived value and willingness to purchase. They found that, for a reasonable surcharge, high NFC participants had higher willingness to purchase when the price was partitioned versus combined. To explain this finding, they suggested that although high NFC participants can accurately figure out the total purchase cost, they are more likely to see reasonable surcharges “as an inherent expenses associated with the purchase situation” and hence only focus on the base price when evaluating the offer (Route 1). Thus, high NFC can reduce the saliency of the SPC.

*Individual Surcharge Skepticism.* Schindler, Morrin, & Bechwati (2005) examined how consumers’ inferred profit motive for shipping charges influences their reactions to partitioned prices. They argued that consumers may be different in their “shipping-charge skepticism” scale so that some consumers perceive shipping charges as unfair profit sources while others are less skeptical. They found that when an external reference price for the focal product (i.e., a table lamp) was provided, less

skeptical participants preferred partitioned prices over combined prices. The opposite pattern was true for more skeptical participants. These results are consistent with the notion that surcharge skepticism affecting biases in the perceived salience and diagnosticity of the SPC. Non-skeptics tended to focus on the price of the focal product and disregard the shipping charge (Route 1). Shipping-charge skeptics, on the other hand, not only paid increase attention to the shipping charge but also perceived the shipping charge, even at a reasonable level, as less justified (Route 2).

*Seller Reputation.* Cheema (2008) studied the impact of seller reputation on consumers' processing of the surcharge in a partitioned price in both auction and traditional retail setting. Using data from eBay, he found that buyers adjust their bids to account for surcharges when buying used DVDs from sellers who have low feedback scores but not when buying from sellers who have significantly higher feedback scores. In addition, he showed that for low-reputation companies, levying high surcharges significantly reduced purchase likelihood relative to an equivalent consolidated price. For high-reputation companies, however, there was no difference in purchase likelihood between charging all-inclusive price or partitioned the same price into a base price and high surcharges.

I suggested that the above results occurred because seller reputation can affect the salience and diagnosticity of the surcharge. Specifically, when dealing with low-reputation sellers, participants tended to pay greater attention and elaborate more on surcharges. Consequently, their negative reactions to high surcharges led to low purchase intentions and willingness to pay (Route 2). In contrast, good reputation may

reduce the diagnosticity of surcharges by undermining confidence in any reference suggesting that surcharges by reputable sellers are excessive. Because the high reputation sellers' shipping and handling surcharge was low both in importance and in processing difficulty (i.e., a relatively small and easy-to-process surcharge), consumers buying from high-reputation companies were more likely to use calculating strategies instead (Route 6).

#### Factors Influence the Diagnosticity of the SPC

*Individual Surcharge Skepticism.* See discussion above for shipping-charge skeptics.

*Seller Reputation.* See discussion above for the interaction between seller reputation and surcharge level as well as discussion below for the interaction among seller reputation, NFC and surcharge level.

*Individual Price-Persuasion Knowledge.* Based on the persuasion-knowledge model (PKM) (Friestad & Wright, 1994), a study by Kachersky & Kim (2010) investigated the interaction between participants' manipulated price-format persuasion knowledge and price component fairness. They showed that when participants were made to believe that firms use partitioned prices to draw consumers' attention to the base price but not to the surcharge, they choose inclusive offer more often than comparable partitioned offer, regardless whether the surcharge in the partitioned price is fairly priced or not. On the contrary, when participants were made to believe that

firms use inclusive price primarily to create perceptions of value, they prefer partitioned offer more (less) when the surcharge is fair (unfair) (Route 2). Hence, I conclude that, my model is applicable only when consumers do not have any persuasion knowledge about the price partitioning strategy because their beliefs about the manipulative intent behind the price strategy can override the diagnosticity of the SPC.

*NFC*. When the surcharges are unreasonable, Burman & Biswas (2007) showed that NFC affected value perceptions and willingness to purchase in ways suggesting that it impacted the perceptions of diagnosticity of the surcharge. High NFC participants preferred consolidated prices to partitioned prices due to their negative fairness perceptions on the surcharges. However, low NFC responded similarly to both price frames in terms of value perceptions and willingness to purchase. They suggested that high NFC participants are more likely to go through a two-stage process, first recognizing and accepting the surcharges and then discounting or rejecting them on the ground of fairness (Route 2). Low NFC participants, on the other hand, are unlikely to reach the correction stage and hence will respond similarly to both price frames (Route 6).

Cheema (2008) examined the three-way interaction between NFC, seller reputation and surcharge level on purchase likelihood in his fourth study, which showed that NFC can moderate the diagnosticity of the SPC when other diagnostic cues (e.g., seller reputation) were present. He argued that since low NFC participants tend to focus on easy-to-process cues in order to minimize their cognitive effort,

seller's reputation rating would be the main driver for their purchase intentions. High NFC participants, on the other hand, will be more likely to incorporate both reputation rating and surcharge level into their purchase decisions.

Results from this study supported his predictions. High NFC participants were more likely to buy from low-reputation sellers with a small surcharge than with a high surcharge (Route 2). However, there were no differences in purchase likelihood for high NFC participants when buying from high-reputation sellers across surcharge levels (Route 6). In contrast, no interactions were found between seller reputation and surcharge level for low NFC participants in purchase likelihood. Only the main effect of reputation was significantly significant, indicating that low NFC participants were influenced by seller reputation only.

Thus, for high NFC participants, the SPC is diagnostic only when seller reputation is low. This is consistent with my previous argument. For low NFC participants, on the other hand, the impact of seller reputation completely overrode the diagnosticity of the SPC. This represents another boundary condition of the model.

#### Factors Influence the Importance of the SPC

*Brand Affect.* Morwitz et al. (1998) suggested that consumers' attitude toward a brand influences their motivation to process partitioned prices. They argued that consumers with either favorable or unfavorable brand attitude may process the price information with little effort because their decisions to purchase the brand are less likely to be influenced by price information. On the other hand, consumers with moderately favorable brand attitude are likely to process price information more

thoroughly because accurate price information would help them reduce uncertainty and facilitate decision-making. These results are consistent with the idea that strong brand affect reduces the importance of the SPC, whereas weak brand affect increases the importance of the SPC in the overall price evaluation. Thus, participants whose affect for the tested brand were high or low tended to use heuristics to process the surcharge (Route 4). Other the other hand, participants with a modest brand affect were more likely to combine the base price and the surcharge with precise calculation (Route 7).

#### Factors Influence the Processing Difficulty of the SPC

*NFC.* Findings from several studies indicated that NFC can influence consumers' perceptions on the processing difficulty, salience as well as diagnosticity of the SPC. For example, Kim & Kramer's (2006) investigated how NFC influences the impact of surcharge presentation on demand. They found that although purchase likelihood did not differ among high NFC participants or across dollar surcharge conditions, low NFC participants indicated higher purchase likelihood when exposed to percentage surcharges than when exposed to dollar surcharges. They suggested that low NFC responded to percentage vs. dollar surcharge differentially because the former requires more cognitive efforts to process (Route 4 vs. Route 6). Therefore, they are more likely to ignore or discount percentage surcharges, resulting in lower recalled total purchase cost relative to dollar surcharges. High NFC participants, due to their innate tendency to engaging in and enjoying effortful processing of information, are more likely to fully take into account surcharges regardless of their



presentation formats (Route 6), leading to more accurate price recalls and similar purchase likelihood in both surcharge conditions. Consequently, I concluded that NFC can influence consumers' perceived processing difficulty of the SPC.

### ***General Discussions***

Although behavioral pricing researchers have conducted comprehensive and in-depth analyses on the topic of price partitioning, inconsistencies and ambiguities still exist regarding the underlying psychological mechanisms as well as its impact on evaluation and choice. For instance, drawing upon prospect theory's value function (Kahneman & Tversky, 1979) and mental accounting principle of integrating losses (Thaler, 1985), some researchers suggested that if consumers treat each price component in a partitioned price as a separate loss, then they should prefer integrating them into a single price to minimize disutility (Drumwright, 1992; Johnson et al., 1999).

Alternatively, other researchers posited that dividing a single price into two or more parts increases consumers' perceived cost of information processing and encourages selective attention and differential processing. The augmented processing difficulties of partitioned prices, however, influence evaluation and demand in two seemingly paradoxical ways. On the one hand, as cognitive misers (Taylor & Fiske, 1978), consumers are prone to attend to and process secondary price components (e.g., surcharges) less carefully, ignoring or discounting them in their judgment and decision making. As a result, price partitioning often leads to an underestimate of perceived or recalled total price and higher demand than price consolidating (Morwitz et al., 1998).

On the other hand, the separate listing of each price component in a partitioned price can also make the secondary price component or its associated benefit more salient and attract increased consumer attention. If this is the case, consumers' preferences may be shaped by their perception and evaluation of the secondary price or attribute and partitioned prices can either increase or decrease demand relative to comparable all-inclusive prices (Bertini & Wathieu, 2008).

To address these limitations, I proposed an integrative framework that helps distinguish the various psychological mechanisms identified from the extant literature. I built my framework upon the five characteristics of the SPC and demonstrated that an individual facing a partitioned price will take a particular processing route depending on those characteristics. Furthermore, I incorporated both contextual and individual difference variables into my framework and discussed their interactions with the characteristics of the SPC in altering a consumer's choice of processing strategies.

This paper makes several contributions. First, I extended the territory of traditional price partitioning research by critically examining empirical research rooted in the mental accounting principles and by explicitly incorporating this processing mode into my unifying model. Second, I identified five characteristics of the SPC that can help us sufficiently yet parsimoniously differentiate among the various psychological mechanisms and more accurately predict the exact price partitioning effect. Third, my multiple-process framework can be used to identify and explain some of the null or reverse effect of price partitioning. For example, it is possible that, because competing processing routes co-exist, some consumers may take one route and

others may take the contending one. Consequently, on aggregate, the resulting effects cancel each other out.

However, my integrative framework mainly concerns the cognitive prospect of price judgment and evaluation. Yet consumer research has pointed out that affect or emotions can also influence consumers' decision and thought processes in various contexts. For example, Lee and Han (2002) showed that advertising a partitioned price often triggers negative affect, which, in turn, could degenerate into boycotting of the brand and damaging word-of-mouth. In addition, other researchers suggested that the partitioned presentation of prices may increase the clarity of the price structure and improve the trustworthiness of the sellers (Munger & Grewal, 2001; Xia & Monroe, 2004). Consequently, future research should explicitly incorporate and examine the role of affect in my proposed framework.

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